Personnel

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N THIS ISSUE

Indices of Personnel Management

"The Supervisory Six"

Time Study and Wage Incentives

A Modern Medical Program

Measuring the Value of Training

Training Job Evaluators

Union Activity on Employers' Property

JULY, 1946

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Personnel

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.....Strictly personnel

Giving Workers the Economic Facts

Recent surveys of worker opinion by *Factory* indicate that management is doing a notoriously bad job of selling its version of the economic facts of life to the public and to its own workers, while by comparison labor is doing a highly successful job of employee indoctrination. That workers are still poorly informed by management on such things as where jobs come from, the size of corporate profits, "full employment," annual wages, etc., is evident from the survey findings. Less than 50 per cent of the workers polled had even heard of the last two topics.

Nevertheless, a number of alert companies have established effective programs to get across to their workers the basic economic principles underlying the operation of a business. While some of these programs are directed to the rank and file, a majority of them seem to be designed for foremen and supervisors, who can relay the facts learned to a wider group and are also better equipped to answer the economic queries of their subordinates.

An outstanding program of this nature is that of The Bell Telephone Company of Pennsylvania. This program consists of a discussion course totaling about six hours. Discussion groups usually are composed of not more than 10 persons, for the management has found that spontaneous discussion and active participation by each member can be best obtained in groups of this size.

After a brief general discussion of fundamentals, the participants organize and personally manage a small telephone business (any type of enterprise could be substituted). In conducting this imaginary business, attention is devoted not only to the economic principles involved but also to the importance of balanced relations among customers, employees, and owners.

Considerable interest has been evinced by the trainees in such discussion topics as the following: (1) How money is raised to operate a business. (2) The difference between stocks and bonds, and the importance of the proper distribution of stocks and bonds in the financial structure of the business. (3) The kinds of people who invest their savings in stocks and bonds. (4) The importance of getting and maintaining the confidence and respect of investors. (5) The problems of management in satisfying customers, employees, and investors. (6) The fact that the money earned by the enterprise goes largely to the employees. (7) The fact that wages can be safely increased only by increasing the production of goods and services. (8) What inflation is and how it occurs. (9) The importance of providing for depreciation, and how this is done.

Approximately 1,000 first-line supervisors and vocational employees have thus far been given the course, and by the end of this year the total is expected to pass 3,000. A comprehensive manual for discussion leaders, entitled *You and Business,* has been issued by the company.

A Novel Grievance Procedure

A "Question and Request Box" which encourages workers to air their grievances in much the same way that suggestion boxes solicit their ideas has greatly facilitated two-way communication between management and employees at Pitney-Bowes, Inc. Workers are assured of receiving written replies from management on any questions pertaining to working conditions, individual earnings, or other purely personal matters. Boxes are centrally located throughout the plant and offices. Every complaint or request for information which is submitted is answered, whether the employee signs his request or not.

The company has made it clear that questions or requests may be made verbally at any time to supervisors or members of the personnel department; the box is used only to assure workers that they will receive a *written* reply on any matters they feel important enough to warrant such consideration.

Special question forms, placed near the boxes, provide space for questions and re-

quests. These forms enable employees to indicate whether they wish an interview with the personnel department, or with any particular individual in the company, and also whether the writer wishes the answer to his question or request published.

The name, "Question and Request Box," incidentally, is well-chosen, since the system is not purely a grievance procedure; rather, it is aimed at ferreting out workers' questions and answering them adequately *before* they can become grievances.

The plan has been in successful operation since the latter part of 1944. Writes J. J. Morrow, personnel manager: "In addition to serving as an outlet for complaints, the Question and Request Box serves as a sounding board through which we can reach our employees. This plan supplements our Industrial Relations Council, which is similar to a Labor-Management Committee and, in fact, is our Labor-Management Committee, converted and renamed."

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Regulating Unions and the Right to Strike

What is the present attitude of the public regarding the social responsibility of labor unions on the one hand and business men on the other? To track down the answer to this significant question, The Psychological Corporation recently conducted a poll based on 5,000 personal interviews in 125 cities and towns, representing a cross-section of urban and small-town communities.

The questions themselves were based on the following considerations:

The right of workers to quit their jobs at any time has long been taken for granted, but in recent years this right has also come to be identified with organized labor unions, as many polls have shown. The right of owners and managers to shut down their plants as a step in dealing with labor unions has been widely questioned. When a large manufacturer recently closed his plants with the statement that he could no longer operate them under conflicting union and government controls, his action was sharply condemned.

In reply to the question, "Have workers and unions a right to strike?", 63.7 per cent answered "yes," 29.3 per cent, "no," and the remaining 7 per cent were uncertain.

When it comes to the right of employers to shut down their factories and stores, reactions are quite different. To the question, "Have business men a right to shut down?", 49.5 per cent replied in the affirmative, 43.6 in the negative, while the remaining 6.9 per cent were uncertain.

The large majority of the American public favors stronger laws to regulate the unions. If this survey had included the farm population, this majority would probably have been even larger. One aspect of the problem was touched on by the following question, posed to 2,500 individuals: "If a candidate for Congress promised to support stronger laws to regulate the unions, would you vote for him or against him?" Fully 66.7 per cent indicated that they would vote for him; 19.7 per cent said they would vote against him; the remainder were undecided.

Even more significant than the fact that the large majority favor stronger laws to regulate the unions is the finding that a large proportion of union members are also of this opinion. The answers by union members *vs.* non-union members were:

Replies	Union Members	Non-Union
Would vote for	60%	69%
Would vote against ..	26	18
Uncertain	14	13

☆

Industry Representative Appraises Work of Conciliation Service

The most frequently voiced criticisms of the work of the U. S. Conciliation Service revolve about three major points, according to Carroll E. French, NAM representative, speaking for industry at the recent U. S. Conciliation Service Current Problems Conference at Washington:

1. Lack of confidence in the impartiality, fairness, and objectivity of the Conciliation Service.
2. Failure to encourage and insist upon the collective bargaining process as a major means of settling disputes.
3. Lack of what appears to be uniform or approved standards of practice and procedure in the field.

Commenting on "the feeling that the Conciliation Department is not impartial or objective in its dealings between labor unions on the one hand and the employer on the other," Mr. French pointed out that the Department of Conciliation has, for

many years, been located in the Department of Labor and that it has been "the prevailing opinion among industry that the background of the Conciliation staff is predominantly organized labor."

Mr. French emphasized that industry is not interested in relocating the Department of Conciliation. It was observed, however, that the basic function of the U. S. Department of Labor, as clearly stated in enabling legistlation, is the promotion of all lawful interests of labor in the United States. The failure of the Conciliation Service to write out and announce its policy is responsible, in the speaker's opinion, for the lack of understanding, on the part of many people, of just what that policy is.

"With respect to the failure of the Conciliation Service to encourage the fullest utilization of the collective bargaining process during the war," Mr. French continued, "the habit of free bargaining and of making concessions in the interests of voluntary agreements was practically lost sight of. Rigid insistence on maximum demands in the hope of securing them from the War Labor Board or other forms of compulsory arbitration all too often deadlocked bargaining negotiations. There is, in the minds of many employers, more than a suspicion that some conciliators and representatives of the Department of Labor lend informal encouragement to hopes of appealing to Washington—and even the possibility of government seizure of plants—with a result that collective bargaining negotiations are deadlocked. All this has seriously impaired the influence and effectiveness of the conciliation process and done real damage to collective bargaining."

Mr. French summarized his suggestions for the improvement of the Conciliation Service as follows:

1. "Disseminate in suitable form for the information of industry and the public generally information with respect to your policies and objectives, together with a summary of uniform and approved practices and procedures governing the operations of the Conciliation representatives in the field. . . . It will not only serve as a checklist to you in the Conciliation Service on the effectiveness of your own procedures but will give us an effective answer to use in convincing those employers who are inclined to question the basic motives and functions of the Conciliation Service. . . ."

2. "Encourage and emphasize to the utmost the fullest utilization of the collective bargaining processes as the soundest method of adjustment of labor disputes. . . . Employers, . . . unlike unions, are under legal compulsion to continue the bargaining process in good faith. Even though the union's obligation to bargain is not as yet a legal one, it is without question a moral one and, in our view, it is an obligation of the Conciliation Service to urge this responsibility on both the union and the employers, with a view to adjustment of dispute by a process of mutual concession. It is likewise our feeling that to hint at the desirability . . . of arbitration would be outside the scope of the responsibilities of the conciliator. . . ."

3. "Fullest possible utilization of Regional Advisory Committees. In our opinion, the decision of the Secretary of Labor to . . . establish Regional Advisory Committees to work with the Department of Conciliation in the improvement of the Service was . . . most constructive. . . . These Committees should prove most effective agencies for the dissemination of information as to the real objectives and functions of the Department of Conciliation and offer a medium through which industry and labor can exchange ideas and offer constructive suggestions for the functioning of the Conciliation Service and to further the cause of free collective bargaining."

Workers' Experience During Reconversion

After VJ-Day the transition of workers to peacetime activities proceeded apace, but at different speeds and with different effects on the men and women who had been employed during the war, according to a study of 3,600 war workers by the Bureau of Labor Statistics. The work and wage experiences of these workers had been surveyed by the Bureau in the spring of 1945, and the group was resurveyed in the winter of 1945-46 to determine what changes had occurred since the war's end in their jobs, wages, location, etc. Some of the findings of the latest survey, as summarized by Nathan Weinberg of the Bureau's Wage Analysis Branch, follow:

A fourth of the war workers were unemployed in the winter of 1945-46; a considerably higher proportion of women than of men were jobless, and more older than younger workers. Those who did have jobs in the winter of 1945-46 were earning substantially less than in war work but as much as the average factory wage earner. In most cases, wages during the first phase of reconversion were inadequate for the maintenance of living standards permitted

by earnings in the year preceding the Pearl Harbor attack.

More than a quarter of the women in war plants in the spring of 1945 had left the labor market by the winter of 1945-46; most of these were housewives. (More recent figures by the U. S. Employment Service indicate that the displacement of women war workers has been accelerated in recent months, and by May of this year it was estimated that about three-fourths of the extra women who were in the labor force during the war period had returned to former activities—many to household tasks.)

Considerable geographical mobility was indicated; a fourth of the war workers had moved out of their wartime communities, less than half of them back to where they had lived in January, 1941. In contrast, workers who had been employed in essentially non-war establishments during the spring of 1945 were in large part still employed in the same establishments.

Added to the reshuffling of workers was an industrial and occupational redistribution. In the winter of 1945-46 the distribution of workers among industries no longer resembled the wartime pattern, and —of greater importance—the prewar pattern had not been reestablished. The same was true with respect to the distribution of workers among occupational groups.

The flow of war workers tended to be in the direction of lower-wage industries and lower-wage jobs. On the average, former war workers were earning 31 per cent less than in the previous spring. While the reduced earnings were largely the result of a decline in hours worked, as well as downgrading, the redistribution of workers, occupationally and industrially, undoubtedly contributed to the diminution in wage income.

Formulating a Seniority Policy

What guiding principles should be followed by management in formulating a seniority policy? According to a recent study by NAM's Industrial Relations Department, four major principles should be observed in drafting seniority rules:

1. The policy makers must have an intimate and thorough knowledge of the operations and organization of the particular plant or company involved. The seniority policy represents one of the most important aspects of employer-employee relations, and thus must be designed by capable people.
2. The policy must be fitted to the specific requirements of the particular enterprise. There is no such thing as a good "standard" seniority policy. A policy which may work excellently in Company A may be entirely unsatisfactory in Company B.
3. The policy must be sufficiently flexible to enable management to operate efficiently and to meet unexpected situations and complications.
4. When the policy is reduced to writing, its terms must be clear, specific, and complete. Much of the past difficulty with seniority has resulted from the fact that implication was substituted for precise definition of terms, from the fact that vague generalities took the place of detailed, explicit provisions.

Published as *Management Memo No. 1,* the report of the NAM survey findings describes current industrial seniority practices and includes a discussion setting forth current thinking as to the correct use of seniority by industry.

AMA Seeking Copies of Agreements With Office Unions

To develop a pool of up-to-date information on labor relations developments in the office field, AMA is seeking to enlarge its collection of union contracts covering clerical workers. The Association will be grateful to all companies which have entered into such contracts if they will file copies of their agreements at AMA headquarters.

In any use which is made of this material, names of companies or unions involved will not be mentioned. Copies should be addressed: Editor, American Management Association, 330 West 42nd Street, New York 18, N. Y.

INDICES OF PERSONNEL MANAGEMENT

By J. STEVENS STOCK* and HARRIET LUBIN

Personnel Studies and Statistics Branch
Office of Industrial Relations
Navy Department

Companies that spend large sums for employee relations activities, training programs, employee benefits and incentives, etc., seldom attempt to evaluate in concrete terms the contributions of personnel work to their organizations. While it is true that not all personnel procedures and their results can be translated into dollars-and-cents terms, much can be done to justify the personnel program to top management. The authors of this article describe a number of indices which may be developed to guide the personnel program and, by "selling" it to top management, to justify more adequate personnel budgets. The article is based on studies made by the Personnel Studies and Statistics Branch of the Navy Department.

PERSONNEL administration is a modern "social invention" which, like many analagous mechanical inventions, has been marketed before the value of all its features has been thoroughly demonstrated. The procedural duties traditionally associated with the personnel office, such as keeping time and attendance records and the like, have long been studied by management and seldom suffer from a lack of adequate control. Their justification has been unnecessary. The other side of personnel administration, however, as represented by such functions as placement, training, wage and salary classification, employee relations, etc., is thought of as untried and often suspected by top management and the budgeteers as being a luxury and a "newfangled idea." It is this side of personnel administration which is often referred to as the professionalized side. The content of this article is restricted to a discussion of the kinds of measurements applicable to the professionalized aspects of industrial relations. Its purpose is to suggest some types of indices which may be useful in guiding an industrial relations program and selling it to all levels of management.

MANAGEMENT'S QUESTIONS

The questions concerning personnel administration which top management asks of middle management and the corresponding questions which middle management asks of first-line management are not only different questions, but reflect an entirely different point of view. The point of view of these questions depends on the level of management from which they issue.

THE LEVELS OF MANAGEMENT

For convenience in our later discussions, let us define quite arbitrarily three levels of management:

1. *Top Management*—the levels of an organization which set the broadest policies and establish the budget. Since this would depend upon the size and level of the organization being considered, it is convenient to

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assume that top management is all authorities higher than the personnel office.

2. *Middle Management*—those separate areas in any organization which determine operating policy in their own technical specialty; *i.e.*, middle management is any line or staff organizational function which reports to the same top management as the personnel office. Thus we shall consider the head of the personnel office as middle management.
3. *First-Line Management*—the areas of direct supervision of operations or technical specialties; all those who report to middle management.

THE KINDS OF QUESTIONS

Each level of management needs different kinds of information. The following are some examples:

1. Operating Questions. Top management asks the personnel director (middle management), "What does the program cost?" The personnel director, in turn, asks those who perform each personnel function (first-line management), "Is the personnel program efficient and adequate?" And each of those charged with personnel function asks himself, "What is my workload and efficiency?"
2. Barometer Questions. Top management asks the personnel director, "What are your needs for policy and backing?" The personnel director asks each individual performing a personnel function, "What are the danger signals and needs for action?" And each person in the latter group asks himself, "Is my function effective?"
3. Staff Service Questions. Top management asks the personnel director, "What progress are you making and what problems are you solving?" In turn the personnel director asks those performing each separate personnel function, "How is the program being of service to the various parts of the total organization?"
4. Worth Questions. Top management, the personnel director, and those performing each personnel function all want to know, "What is the dollars-and-cents value of each part of the personnel program?"

THE PERSONNEL OFFICE'S ANSWERS

While these questions are not new, little thought has been given to their quantitative, factual answers. We shall call these answers *Indices of Personnel Management*. These indices are, necessarily, of four types: operating, barometer, staff service, and worth. Let us consider each of these kinds of indices.

OPERATING INDICES

Operating indices are the measures that control the operations of the personnel office. They gauge the input into the personnel program. They measure how much work is being done and how efficiently such work is being

done by the personnel office itself. They indicate to the personnel director his staffing requirements and his operating efficiency and help him project his future operations. The four types of operating indices are:

1. *Workload,* which tells how much work is being done and inventories backlog. It is set in several ways: first, by the number of employees in the establishment; second, from the problems posed by the internal and external social environment of the establishment; third, by the policies under which the establishment operates; and, fourth, by the higher policies as represented by legal requirements. Although measures of current workload, when related to size of staff, are useful in themselves for internal analysis of efficiency, another, perhaps more important, use for workload measures is that of predicting future staffing needs. In such cases only those measures of workload which can easily and accurately be projected into the future are of any use.
2. *Adequacy,* which expresses the actual impact of the program relative to its potential impact. It answers the questions on whether or not the program is extensive enough—whether or not it is geared to meet its purpose. When broken down by organizational unit, and evaluated from the viewpoint of the persons or organizational units served, it is a measure of staff service.
3. *Efficiency,* which expresses in dollars, or number of employees, the cost of the program. It measures the gross output of services per unit of effort. Effort in this case may be measured by cost in dollars-and-cents and man-hours of work or in men employed full time. It is the opposite of worth indices in the sense that it is the cost of unit input rather than the over-all net worth of output.
4. *Quality,* which expresses how well the job is being done from a technical point of view. It differs from a staff service index only in that quality is judged here from the viewpoint of the personnel office offering the services while in staff service it is judged from the viewpoint of the organizational unit receiving the service.

These statistics are highly interrelated. In general, the ratio of workload to gross employment expresses adequacy; the ratio of workload to employment in the personnel function expresses efficiency; and the ratio of acceptable work to workload expresses quality. There are, however, important variations of this general scheme.

There are many statistical measures which are similar to operating indices but which are not discussed here because they are the technical tools of the profession. For instance, such statistical techniques as tests and measurements by which tests are developed and standardized, though extremely important in placement operations, have little to do with the administrative operations of the personnel office.

BAROMETER INDICES

Barometer indices are the measures which give direction to the industrial relations program. They suggest positive action by which the personnel ad-

ministrator charts his course—indicate the "danger signals" pointing up the needs for a new policy or an entire change of program. Characteristically, they are rates and measures of such factors as:

1. *Stability*—as reflected in absences, tardiness, quits, and firings
2. *Balance*—as reflected in promotions, vacancies, relative pay
3. *Satisfaction*—as reflected in grievances, morale
4. *Safety*—as reflected in lost-time accidents.

One purpose of barometer indices in a large decentralized organization is to avoid the burdensome clearances and processing of detailed personnel actions which easily tend to crowd out the more important professionalized functions. Such indices permit the decentralization of the processing functions by serving to police the compliance with policies such as wage policies, job classification policies, and the like, carried out at the operating levels, thus leaving the central personnel office to concentrate on the improvement and perfection of its policies.

It is dangerous to interpret any index in a "straight-line" sense, *i.e.*, to consider that if it goes up it is bad and if it goes down it is good, or vice versa.

For instance, in a loose labor market an extremely low turnover rate may indicate stagnation, and a low absence rate may be contrary to an enlightened leave policy. While the extreme ranges of any index in either direction may indicate a danger signal, any such statistics must be interpreted against a background of the underlying facts.

STAFF SERVICE INDICES

Staff service indices are the measures of the indirect worth of the personnel office—its contribution in services rendered throughout the organization. They chart the progress of the personnel office in gaining the cooperation of the other organizational functions and in assisting them in their day-to-day personnel problems. Thus they indicate the acceptance of the various parts of a program throughout the organization. Specifically, they attempt to measure the value of the contributions to other departments, and not just the amount of work done. Examples of staff service indices are:

1. Comparative Efficiency Ratings of Those Receiving Benefits of Program *vs.* Others
2. Attitude of Both Workers and Supervisors in Their Acceptance of the Program
3. Percentage of Recommendations Accepted
4. Percentage of Employees Receiving Various Kinds of Direct Services of Personnel Office.

Comparative efficiency ratings are staff service indices since, as a substitute for production data, they measure indirect worth. Also, much of the success of the personnel program is contingent upon the supervisor's acceptance of the personnel policies adopted and the recommendations made. The percentage of recommendations accepted and the percentage of employees

receiving various kinds of direct services of the personnel office are, in effect, adaptations of the quality and adequacy statistics mentioned above as operating indices. They are an attempt to get at the quality and adequacy from the viewpoint of the organizational units served rather than the technical quality and adequacy of the services from the viewpoint of the personnel office. Such indices should generally be broken down separately for each integrated organizational unit to show the extent to which the industrial relations program is making contributions in each part of the organization.

WORTH INDICES

Worth indices are the measures in cold, quantitative terms of the dollars-and-cents contributions made by the personnel office. Since industrial relations deals for the most part with intangibles, such factual measures are most difficult to obtain and are often only half-truths. Indeed, there are many indirect contributions of the personnel office which are impossible to evaluate in even the roughest approximation to strict monetary accounting. Nevertheless, aside from the purely altruistic motives of keeping the employees happy, the personnel office exists only to make a dollars-and-cents contribution to the total operation by increasing production and reducing costs. Many personnel programs exist and will continue to exist, without regard to their worth, simply because the law requires them. It is the role of personnel management in this case to attempt to turn such legal requirements into profitable programs wherever possible. Withal, top management still has the right to expect an answer to such a question as, *"We bought a thousand dollars worth of training, but how much was it worth to us?"*

For the most part, there are only three ways in which worth can be shown in dollars-and-cents measures:

1. Through increases in output
2. Through decreases in costs of production
3. Through decreases in turnover, absences, grievances, and the like.

The third of these methods will often be the only one used because personnel offices (especially those which emphasize labor relations and personnel relations) have not worried sufficiently about the central problem of personnel management—that of obtaining the highest production through getting the best possible person in each job. Indeed, the cutting down of turnover in occupations where the force is being reduced may be completely non-profitable. As noted before, even the reduction of absences beyond a certain point may be incompatible with an enlightened leave policy. Finally, it is necessary in interpreting the dollars-and-cents worth of reduction in turnover to evaluate the cost of recruitment, placement, orientation training, processing on and off the payroll, and the interruption to production. These statistics are difficult to estimate and perhaps vary for different kinds of positions. Similarly, for evaluating a reduction in sick leave or any other form of unscheduled absence, not only the value of a day's leave must be included, but also estimates of the

costs of bookkeeping and the interruptions to production. Indeed, for purposes of presentation to top management, all rates should be related to the cost of the program, including, if possible, many hidden costs of time lost by employees in participating in the program. The data for worth indices are usually obtained in one or more of the following ways:

1. *By studying trends,* specifically noting the effects before, during, and after the adoption of some program. (But note the cautions in the later discussions on the interpretation of data.)
2. *By performing controlled social experiments.* Here two groups are set up within the establishment, one which receives the benefit of the program and one which does not. This need not be costly. For instance, if a training program for typists is being initiated, it is a simple matter to train half the typists in each organizational unit and not train the others until a comparison in production can be made.
3. *By conducting attitude surveys.* These measure the employee's personal evaluation of his establishment's personnel programs and determine to what extent each personnel program is making its contribution. Exit interviews and grievances yield attitude data as a by-product. One thing should be remembered here: Management foots the bill. It cannot, therefore, always be expected to agree with the employees' attitudes toward the program.

A CASE IN POINT

Although these different kinds of indices overlap considerably in content, they must not be confused, for all too often the personnel administrator attempts to justify his operations by showing how much work he is doing without first convincing top management that what he is doing is worth while. A simple example will illustrate the differences between the four types of indices. Suppose we are talking about the operation of an employee suggestions program:

1. *Our operations* would be measured by all those things which measure the workload, adequacy, efficiency, and quality of the program, such as the number of suggestions submitted, the number submitted per 100 employees, the percentage of individuals in the group who make suggestions, the average cost of processing a suggestion, the number adopted per 100 employees, and the dollar value of suggestions expressed as a percentage of payroll—all related to corresponding statistics in similar establishments.
2. *Our barometer* would be the attitude of employees towards management's acceptance of their suggestions. Such an index would be the percentage of employees interviewed in an attitude survey who feel that management would accept their suggestions and give them fair credit.
3. *Our staff service* would be measured by the number of useful suggestions adopted and promulgated throughout the establishment.
4. *Our worth* would be the estimated value of the suggestions in dollars and cents saved as a result of their adoption.

THE NATURE OF REPORTS

The following paragraphs are devoted to a discussion of the nature of reports to management. We shall discuss some techniques involved in collecting, interpreting, and presenting the facts.

I. COLLECTING THE FACTS

The collection of data has become a highly technical operation demanding many refined skills. While no attempt can be made here to present an exhaustive survey of these techniques, we shall discuss three points to remember:

1. *The more data, the less information. Collect fewer, more effective data.* The quantity of useless statistical material amassed in all fields of administration is reaching such an alarming proportion that one would think management has completely dispensed with the homely notions about using horse sense and sound judgment. It is paradoxical that the collection of more and more data often makes for less and less information. Indeed, statistical tables frequently become so long and involved that not even the professional statistician knows what they mean. Perhaps there is something of Lewis Carroll's feeling in this phenomenon:

> "Long and painful experience has taught me one great principle in managing business for other people, *viz.*, if you want to inspire confidence, give plenty of statistics. It does not matter that they should be accurate, or even intelligible, so long as there is enough of them."

It is unwise to embark on any elaborate statistical program without first having some idea of the cost and *direct worth* of the statistics required. Since the answers to the questions that management is asking at all levels come from such a multiplicity of sources, there is the danger of the data being excessively detailed. By and large, the tendency is to collect far too many data.

2. *Distinguish between research and reporting systems.* Generally, there are two ways in which management is served by statistics:

a. *Research*—the intensive study of a given problem or hypothesis by subjecting it to the light of cross-tabulation, controlled experiment, detailed analysis, and the whole bag of technical, analytical tools now available to statisticians.
b. *Statistical reporting*—the presentation of recurrent data which serve in the control and direction of a business or program.

A distinction should be clearly made between research statistics and reporting statistics because the confusion of research statistics in a reporting system often overloads the reporting system with a legion of data not always currently usable. For example, most personnel reporting forms show turnover data, separations, and accessions. When separation rates rise sharply, considerable pressure is developed to break down separations into elaborate detail. This means a complicated reporting system, increased expense, and

slow reporting of the required data. Actually, such a complicated reporting system is not always warranted; a one-time research study would be preferable, using a separate schedule or questionnaire and perhaps confining the study to those reporting units which show high separation rates.

3. *Use by-product information.* The most inexpensive source of management data comes as a by-product of the normal processing operations of the personnel office. Often no thought is given in the development of operating documents to the possibility of using them as basic sources of statistical information as well as for record purposes. They can, however, very easily be adapted to this additional use. Wherever possible, this source of information should be tapped for its richness of content and ease of collection. For instance, an analysis of exit interviews may yield causes of excessive quits; payroll data may uncover areas of absenteeism; accepted applications yield information regarding accessions of new workers, and so forth. In addition, cost accounting records are rich sources of productivity and group efficiency data.

To summarize:

a. There is always the temptation to collect too many data in detailed cross-tabulations where careful planning and preliminary analysis of the problem can easily prevent such extravagances.
b. A similar problem is the collection of data as a recurrent report when a one-time study, if and when the problem becomes critical, is all that is required.
c. Many "malignant" problems in industry can be localized, and an intensive study of the "area of infection" will yield quicker, less expensive, and usually much more clear-cut answers than broad cross-sectional studies.
d. On the other hand, where a problem is widespread, the use of scientifically selected samples offers many economies.
e. Often the operating records of a program itself yield many of the answers.

Thus the careful design and planning of data collection can keep its expense at a minimum, and sharpen up the answers to the questions top, middle, and first-line management are asking.

II. INTERPRETING THE FACTS

A statistical measure, like hash, depends on who makes it. The interpretation of all statistical measures must be made from two points of view:

1. *The internal effects*—those phenomena *within the organization* to which trends of any index may be attributed. Let us consider some problems of the analysis of internal effects on the indices of personnel management. Total measures are generally not satisfactory without a careful follow-up to localize the areas within the organization which are the sources of change in

the indices. For instance, it is usually not satisfactory to know the over-all absence rate in an organization without also knowing at least occasionally the pay levels, the occupational groups, and the organizational units in which absences are excessive or those in which there is no problem. It is advisable in such cases to observe the total rates at frequent intervals and only when unexplained changes occur to break down the rate in order to localize the source of the change.

Again, in evaluating a change in an index, one must not jump to the conclusion that some particular phase of an industrial relations program was the cause of it. Attitude surveys or control tests must often be made to determine the exact cause. For instance, a reduction in an excessive absence rate may be due to an improved pay policy, better working conditions, improved transportation, or any one or all of a legion of other internal effects, or it may be wholly ascribable to

2. *External Effects*—those phenomena *within the social environment* to which trends of any index may be attributed. Indeed, the social environment of an establishment is so closely bound up with the fortunes of the establishment itself that an effective industrial relations program may soon expand into a public relations program. The conditions of the labor market, the public's attitude toward the establishment's employment policy, the housing, recreation, and transportation situation—all have marked effects which must be considered both in the basic plan of the industrial relations program and in its day-to-day direction. For instance, an abrupt increase in the quit rate in a particular establishment may reflect only the corresponding increase in the quit rate in the general labor market; the success of the recruitment program may often be a reflection of the public's attitude toward the working conditions of the company; and inadequate housing and transportation have long been known to be a major cause of employee turnover.

While the needs for an industrial relations program are equally acute in prosperity and depression, the nature of the program and the emphasis upon certain functions must vary with general economic conditions. Knowledge of the direct worth of the various parts of the program permits the personnel director to evaluate the contributions made by each function and thus meet the changing conditions with optimum shifts in the internal distribution of his own budget.

Statistical Comparisons. The interpretation of any statistics must always be based on comparisons. Seldom does a single, isolated statistic have any meaning. There are three ways by which statistics are compared in analysis:

a. By studying separately comparable organizations and organizational units. Thus, in the analysis of internal effects we would compare organizational units; in the analysis of external effects we would compare over-all organizations with similar establishments or with the total working force in the social setting of the establishment.

b. By studying trends, or comparisons in time, of the various indices. This is not only helpful for making prognostications but in evaluating the extent and direction of the changes in the indices. In this case, it is common to establish a normal value for each index and certain maximum and minimum values which will be recognized as danger signals.
c. By studying the composition of a phenomenon. Thus, in studying grievances, it is helpful to know what percentage of the grievances come from each occupation. Or in studying the numbers fired, to know what percentage of all persons fired were fired for each major cause.

Commonly these three methods of comparison may be made simultaneously. Thus, we may compare the trends of the turnover rate between organizational units and between establishments at the same time studying the percentage of separations in each organizational unit for each cause.

III. PRESENTING THE FACTS

"It was the best butter," the March Hare meekly replied.

The questions that management at each level is asking about the operation of the personnel program must always be answered in terms of the person asking the questions, else they fail to be understood. There are three principles which must be kept in mind in answering these questions:

1. *Answer from the point of view of the asker.* The answers to the questions that top management is asking must be strictly in the frame of reference of the asker of the questions. The confusion among the four types of indices and the kinds of answers they give, leads to such things as the reporting of the amount of work done when an evaluation of direct worth is requested.

By and large, top management's principle guidance comes from a review of the over-all success of a particular operation. It is perfectly natural that broad questions should receive broad answers. When management asks to see the woods, don't show it the trees.

2. *Avoid the use of technical jargon.* The widespread use of technical jargon among personnel people tends to widen the distance between the personnel office and the operation it is serving, thus isolating it from effective staff service. As the personnel function becomes more and more professionalized, it is quite natural that the language will become unbearably pedantic. While this simplifies the operation of the office itself, it tends to be confusing to the layman.

The use of simple, non-technical language on the part of the personnel administrator can greatly facilitate the understanding of the program throughout the establishment.

3. *Use graphs to enrich the presentation.* The use of good graphic presentation has become an important tool of communication within an organization. The personnel office, with its wealth of human interest, should

find it particularly easy to tell its story in pictures. The shorthand language of pictures will go a long way towards:

a. Widening the audience,
b. Heightening and stimulating the interest,
c. Simplifying, clarifying, and speeding up the assimilation of facts,
d. Fixing the memory, and
e. Convincing all concerned of the efficiency of the program.

* * * * * *

With all the cost and difficult technical detail of developing indices of personnel management, it may be suggested, however, that more money spent on such indices may mean more money available for the programs themselves, both through the more effective operation of the programs and the justification of more adequate budgets.

"THE SUPERVISORY SIX"

By J. J. EVANS, JR.
General Personnel Manager
Armstrong Cork Company

With approximately 2,000 supervisors in widely dispersed locations, Armstrong Cork Company has devoted a great deal of attention over the years to the problem of supervisory development. The result has been the six-pronged program described here by Mr. Evans. Particularly noteworthy is the training plan, which sets up in definite schedule form the training required by each individual supervisor. Adaptations of some or all of the procedures employed by Armstrong may aid other companies to achieve similar objectives.

"HAVE you heard? Joe's dead? He was in an automobile accident on his way home last night and died early this morning. You know Joe—superintendent of final assembly. Everything happens at once. We're over our ears with problems in that section, and now this had to happen. Who in the hell is going to take over?" . . .

Dilemmas like the one caused by Joe's untimely death, unfortunately, occur frequently in organizations. They are not always the result of sudden death. Nor are superintendents the only victims. Death, accident, and illness visit all levels of supervision indiscriminately. Transfers, retirements, and other forms of termination, if anticipated, may not be of such serious nature as unexpected happenings. Nevertheless, any one of them can create a difficult situation if no preparation has been made. Just as important is the problem of supplying competent supervisors when required by expand-

ing operations, and the ever-present problem of having qualified effective supervision at all times throughout the organization.

SUPERVISORY DEVELOPMENT

Why should an organization wait until faced with an emergency before thinking about developing supervisory personnel? It is our contention that sound methods can be devised that will provide effective groundwork toward the day the supervisor may be called upon to accept even more important stewardship with the organization he represents.

Over a period of years our company, in keeping with our "promotion from within" policy, has been interested in setting up tools which we think serve well in developing supervisors individually—not only developing them so that they may do their best on their present jobs, but helping to develop them for any supervisory position they may assume in the future. These tools are interrelated, and when considered together we refer to them as "The Supervisory Six."* They do not exist as a means of regimentation. It is intended that they be used as situations warrant. In fact, a number of these tools are by no means widely used in our company. But they do represent our philosophy. We recognize that it will take a long time to get the complete plan developed, and that it will need many refinements.

The six media comprising "The Supervisory Six" are designed for use with individuals in contrast to group programs, which in reality are supplementary. Figure 1 shows the general structure of our supervisory training program. Each circle shown in the top row represents a component part of "The Supervisory Six." Each part is useful in the training of individual supervisors and can be used for any supervisor, in office or factory, line or staff, and at any level of management. The rectangles at the bottom of Figure 1 represent group training activities.

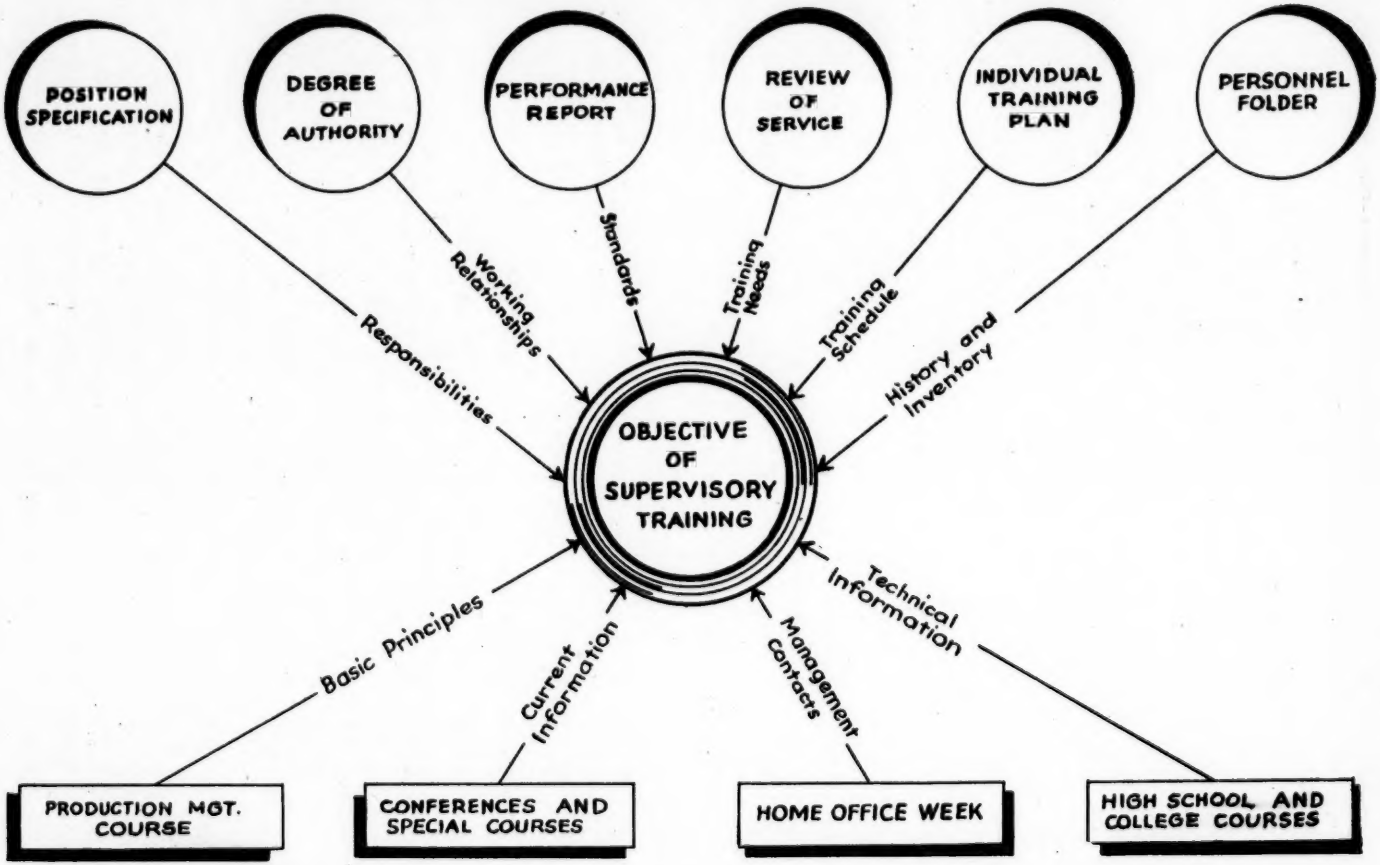
THE POSITION SPECIFICATION

A supervisor may be expected to function successfully only when he knows what is expected of him. This knowledge should be given him in a well-organized and unhurried manner. The Position Specification shown in Figure 2, used also for salary administration purposes, makes possible an orderly, effective presentation of the position responsibilities to the supervisor by his immediate superior. Because of its very nature, the Position Specification serves as the foundation on which much of our effort in connection with supervisor evaluation rests.

DEGREE OF AUTHORITY

No supervisor can hope to approach his peak effectiveness if his relationships—particularly those between himself and his superior—are cloudy. A procedure that can help to clear the atmosphere at the outset may be found in setting down the supervisor's responsibilities, and assigning to each responsi-

*"The Supervisory Six" is copyrighted by Armstrong Cork Company.


ARMSTRONG SUPERVISORY TRAINING METHODS
POSITION SPECIFICATION
DEGREE OF AUTHORITY
PERFORMANCE REPORT
REVIEW OF SERVICE
INDIVIDUAL TRAINING PLAN
PERSONNEL FOLDER
Responsibilities
Working Relationships
Standards
Training Needs
Training Schedule
History and Inventory
OBJECTIVE OF SUPERVISORY TRAINING
Basic Principles
Current Information
Management Contacts
Technical Information
PRODUCTION MGT. COURSE
CONFERENCES AND SPECIAL COURSES
HOME OFFICE WEEK
HIGH SCHOOL AND COLLEGE COURSES

bility the degree of authority with which the supervisor is vested. Figure 2 includes the form we use for this purpose. This form restates the position's responsibilities in breakdown form. We find it valuable as a guide for the discussion of working relationships between the supervisor and his superior, during which the superior frequently cites case examples to emphasize individual points. Here is the way we use it: The superior of any supervisor to whom the procedure is being applied classifies each of the position's responsibilities in terms of the degree of authority attached to it. In doing this, the superior indicates opposite each responsibility listed on the inside pages of the form the authority given according to the classes listed below:

Class 1. Full authority is given to take the necessary action in carrying out the responsibility without consulting or reporting to the superior.

Class 2. Full authority is given to take the necessary action in carrying out the responsibility, but the superior is to be informed of the action taken.

Class 3. Authority is limited. The supervisor is expected to present his recommendation to his superior and may not take action until a decision is reached.

The class selected is that authority to be exercised normally, since it is impossible to cover every situation.

PERFORMANCE REPORT

Beyond the determination of position responsibilities is the need for a periodic recording, showing performance of the supervisor's major responsibilities. This performance is probably best reflected by the over-all performance of that supervisor's department. When used to evaluate the effectiveness of a shift foreman (as is the case in the example shown in Figure 2) this Performance Report takes the form of a shift performance report.

It is important to recognize that some of the factors too frequently absent in the prevailing practice of measuring supervisory performance actually raise danger signals that signify trouble in the making, before it shows up in the operating figures most frequently studied. For example, examination of the sample form, in Figure 2, reveals a trend in employee attitude factors which is bound to have a detrimental effect not yet apparent on cost performance.

Because of the watchdog nature of the performance report, which is really an easily understood "yardstick," it is recommended that such reports be prepared on a basis no less frequent than monthly. With such a procedure, a factual background is provided for the "Review of Service" procedure and Individual Training Plans (discussions of which follow).

"REVIEW OF SERVICE"

More personal than the Department Performance Report is the type of report which provides an inventory of the supervisor's own performance and potentialities. We call our procedure in connection with such reports the "Review of Service." Its purpose is to produce—through written

PERSONNEL FOLDER
Armstrong Cork Company
Responsibility and Authority

analysis and interview—maximum understanding between supervisor and individual, and to assist in developing each member of the organization to his highest effectiveness. True, the Department Performance Report, showing facts and figures as it does, is more objective than the "Review of Service" report. Nevertheless, our experience with the "Review of Service" procedure convinces us that it can be effective, if used properly.

Our "Review of Service" procedure cannot be regarded, in fairness, as a rating device, but rather should be viewed for just what it is—a development plan based on the periodic inventory of an individual. It consists of two basic steps: first, the analysis of performance and the determination of what is specifically needed for a plan of development; second, a discussion of the analysis and suggested development by the individual and his immediate superior. In making the analysis, the up-to-date Position Specification is used as a guide. The superior sets forth his opinion, with supporting facts, of the performance on each responsibility, notes special traits, experience, and aptitudes, and summarizes not only strong factors, but those which might need further strengthening. The final step of the analysis is to list suggestions for the individual's further development. In the second phase—the interview—the superior promotes a mutual discussion of the analysis and suggested development with the individual, for the purpose of establishing a schedule of the plan of development to be followed.

INDIVIDUAL TRAINING PLANS

All training, regardless of method employed, must provide assistance to meet the needs of individual supervisors. With all the training media from which to choose, the training of an individual may prove quite difficult to control. Without a plan, there is danger of the training deteriorating to the point where it continues on a hit-or-miss basis.

The Individual Training Plans procedure sets up, in definite schedule form, the plans to be followed for each individual supervisor. The form used for this purpose by us (see Figure 2) provides space for: training to be given, date to start training, and who is to be responsible for the training. The combined use of the Position Specification and "Review of Service" serves admirably as a basis for determining the training needs to be met by Individual Training Plans.

The use of a schedule like that set forth in the Individual Training Plans procedure furnishes an over-all picture of all training to be given to meet both long- and short-term needs, and a sound basis for follow-up. Planned training does for members of the organization what scheduling has done for product manufacture, planned research for product development, engineering for equipment improvement, etc.

PERSONNEL FOLDER

A running record is kept of each supervisor. For this purpose we have instituted a Personnel Folder system throughout our company. Although there is nothing unique in this idea, the Personnel Folder does serve to

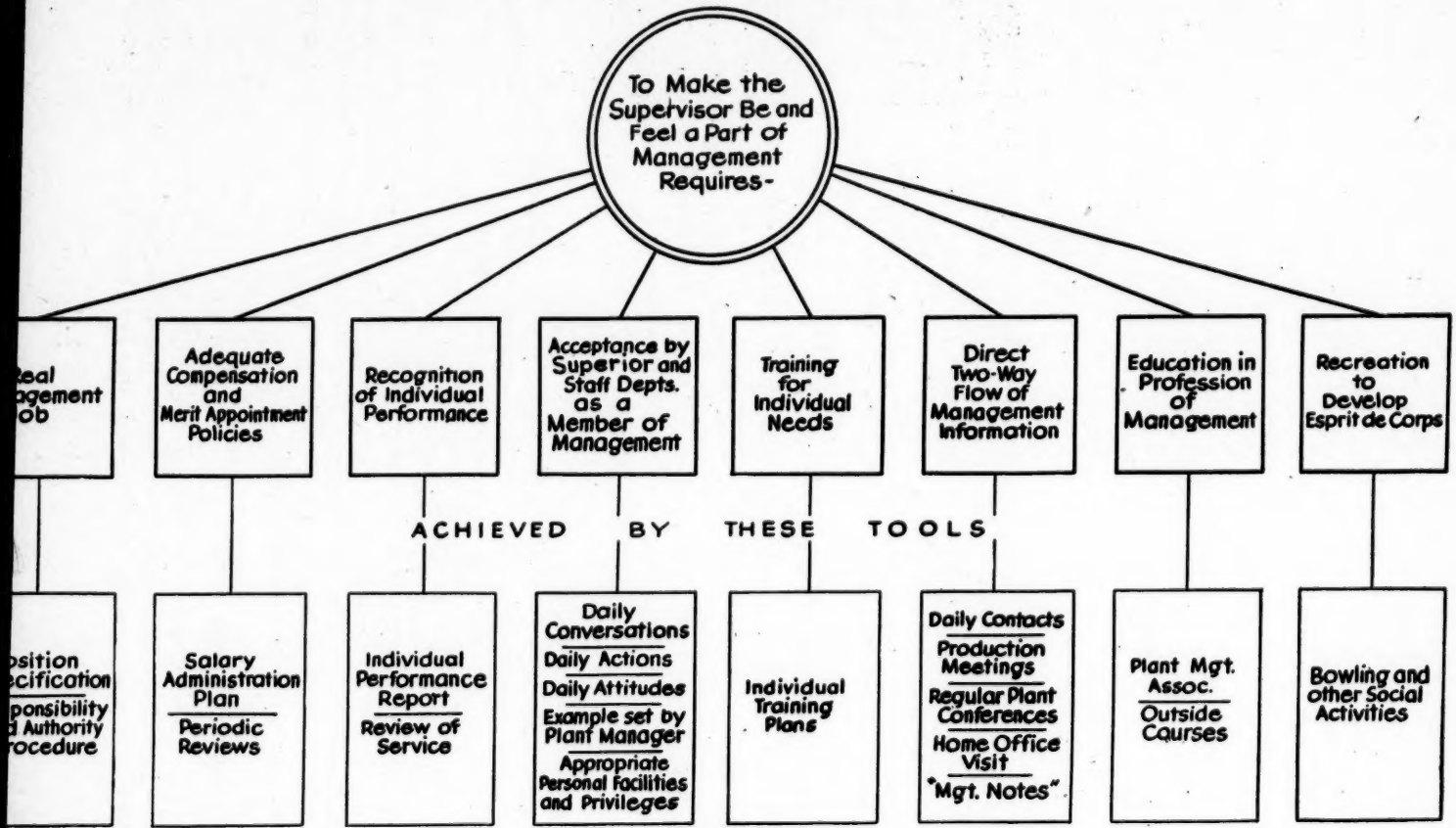

To Make the Supervisor Be and Feel a Part of Management Requires-
eal agement ob
Adequate Compensation and Merit Appointment Policies
Recognition of Individual Performance
Acceptance by Superior and Staff Depts. as a Member of Management
Training for Individual Needs
Direct Two-Way Flow of Management Information
Education in Profession of Management
Recreation to Develop Esprit de Corps
ACHIEVED BY THESE TOOLS
osition ecification ponsibility d Authority rocedure
Salary Administration Plan
Periodic Reviews
Individual Performance Report
Review of Service
Daily Conversations
Daily Actions
Daily Attitudes
Example set by Plant Manager
Appropriate Personal Facilities and Privileges
Individual Training Plans
Daily Contacts
Production Meetings
Regular Plant Conferences
Home Office Visit
"Mgt. Notes"
Plant Mgt. Assoc.
Outside Courses
Bowling and other Social Activities

Figure 3

integrate the supervisor's history—especially that with the company. Often its content is found especially useful as a basis for planning individual development.

Among the entries customarily appearing in the supervisor's Personnel Folder are memoranda, on specially designed forms, recording occurrences in which the supervisor figured which are a credit to the company and to the supervisor himself. Conversely, it is occasionally necessary to use the memorandum form on which to record acts discrediting the supervisor. Records of any training the supervisor receives are also kept in the Personnel Folder. Obviously, the nature of the contents of this folder makes it an invaluable aid to preparing the "Review of Service" analysis.

THE SUPERVISOR'S "PLACE IN THE SUN"

Now that we have seen the development of "The Supervisory Six," suppose we go a step further. Let us assume that a well-qualified successor has been selected to fill a supervisory vacancy. Furthermore, having been fortunate in our selection, we'll say that our supervisor is doing as well as can be expected—the way he handles his authority, his Department Performance Report, his "Review of Service" all indicate that. But have we been fortunate? Something seems wrong. Sure, he's going through the motions of being a good supervisor. But he doesn't seem happy. He seems uninspired.

Perhaps we should take stock of ourselves. Sometimes, without realizing it, top management has expected more of the supervisor than it has been entitled to receive. What should top management do to be entitled to real performance and loyalty on the part of the supervisor? Have we failed to furnish the necessary "spark"? Have we helped our supervisor realize that he really is a part of management? Let us use the chart shown in Figure 3 as a check-chart. If we can and will apply all of the tools suggested by the chart, chances are that our supervisor will know he "has a place in the management sun."

Figure 3

INTEGRATING TIME STUDY WITH WAGE INCENTIVE SYSTEMS

By WARREN L. GANONG*
Department of Industrial Engineering
Northeastern University

Some significant considerations are presented here for companies contemplating the adoption of a wage incentive plan based on standards set by time study, and for those critically reviewing an existing installation. The author indicates three points at which the incentive program can get out of line, and shows what can be done to control the values assigned these points. If a sound wage structure is to be maintained, Mr. Ganong emphasizes, all three points must be fixed accurately at a given time and scrutinized periodically thereafter.

IN this period of return to "cost consciousness" in manufacturing, of economic dissertations by management and labor representatives, of insistent demands for wage increases, and of urgent pleas for increased production of consumer goods, both management and organized labor are viewing incentive systems of wage payment with a critical and appraising eye. Because of the real contribution of soundly administered incentive wage plans to the industrial economy, and because of the apparent inequities in some of the plans as operated, it is highly desirable that there be a clear understanding of the factors involved in determining "a fair day's pay for a fair day's work."

Despite the fact that the use of time study technique for determining production standards in industry is not new, many managements have only a hazy conception of how such standards should be arrived at to be fair under the existing wage payment plan. In fact, many time study men and women have little or no real conviction that the standards they set are "correct." Or if they do have such a conviction, and for apparently good reason, it still is possible that the standards themselves are basically unjust when considered against the background of the particular incentive plan in use.

TIME STUDY PROCEDURE

To understand this problem it is necessary first of all to review briefly the typical steps in computing production standards directly from a time study of the elements of a job. While the procedure varies somewhat from company to company, the steps may be summarized as follows:

1. Investigation of the job
   a. Blueprint.
   b. Methods procedure sheet.
   c. Foreman.
2. Observation of operation as performed
   a. Check for correct method and competence of operator.
   b. Record necessary job data on time study observation sheet.
   c. Determine element breakdown and fully describe each element.
   d. Determine correct reading point for each element.

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3. Stopwatch time study of job
   a. Record the time for the performance of everything that occurs during as many cycles as the type of job requires.
   b. Rate the performance of the operator during the study.
4. Computation
   a. Determine the "base time" for each element—mean, mode, "selected," etc.
   b. Determine the "normal" time for each element: Multiply "base time" by rating factor expressed as a percentage.
   c. Determine the "element standards": Add a "personal and fatigue" allowance to the "normal" time for each element.
   d. Determine the "production standard": Total the element standards, and add such other allowances (tool, delay, machine, etc.) as the specific job may require.

For accurate and consistent standard-setting purposes, the work should not end here. Element standards for the same elements from similar time studies should be compared and reduced to "standard data" to permit the setting of consistent future production standards without recourse to actual time study except for new elements and new types of jobs. For our purpose here, however, the foregoing steps will suffice.

SIGNIFICANCE OF RATING AND ALLOWANCES

Without doubt, the two most important items of the "technical" parts of the above procedure are (1) selecting the correct rating factor to express the deviation of the operator's performance from "normal" performance, and (2) using the correct personal and fatigue allowance for the type of work in question. These are of unusual significance for several reasons:

1. Both, in the last analysis, are based upon judgment.
2. Both are frequently misapplied.
3. Both are inseparably related to each other.
4. Both are an integral part of a sound wage incentive structure built upon time study.

Though it is generally recognized that these two factors are matters of judgment as commonly applied (item 1), the importance of the remaining three items frequently is overlooked. When this happens the value of the incentive system as a fair measure of the workers' productivity is lost. If one wishes fully to comprehend this phase of the time study man's task, a knowledge of the fundamentals of wage payment methods is essential.

FUNDAMENTALS OF WAGE SYSTEMS

Basically, there are two methods of compensating labor:

1. Straight time basis, i.e., "day work."
2. Straight production basis, i.e., "piece work."

These two basic types of wage payment plans represent the two extremes. Earnings under day work are dependent primarily upon time (the number of hours worked), whereas earnings under piece work are dependent primarily upon output (the number of pieces produced). An incentive wage system combines some of the features of each of these two basic plans of wage payment.

Now, the application of wage incentives based upon productivity presupposes some form of measurement to determine the standard or normal level of production. This standard level of output may be designated 100 per cent, or 60 standard minutes, and serves as the reference point to which actual output may be compared.

Likewise, a company must decide how much money it is willing to pay for standard production. Whatever the figure arrived at for a particular type of work, it is commonly a guaranteed basic hourly rate which is paid to the job-holder even though he does not "earn" it in terms of the standard of production designated as 100 per cent.

A company must decide, too, how much it should pay for normal incentive production—"a fair day's pay for a fair day's work."

The relationship of these several factors that affect the total earning possibility for a job may better be understood when charted. For the purpose of our discussion here, an earning curve is used which is typical of the standard-hour and the piece-work systems of wage payment, with incentive beginning at standard or 100 per cent productivity and with 100 per cent labor participation. This type of earning curve is becoming increasingly popular because of its provision for 1 per cent increase in wages for each 1 per cent increase in productivity over the standard level. Such an earning curve, however, is recommended only when it is possible to set performance standards which are true measures of effort, insofar as such measurement is possible by use of the most practicable known techniques.

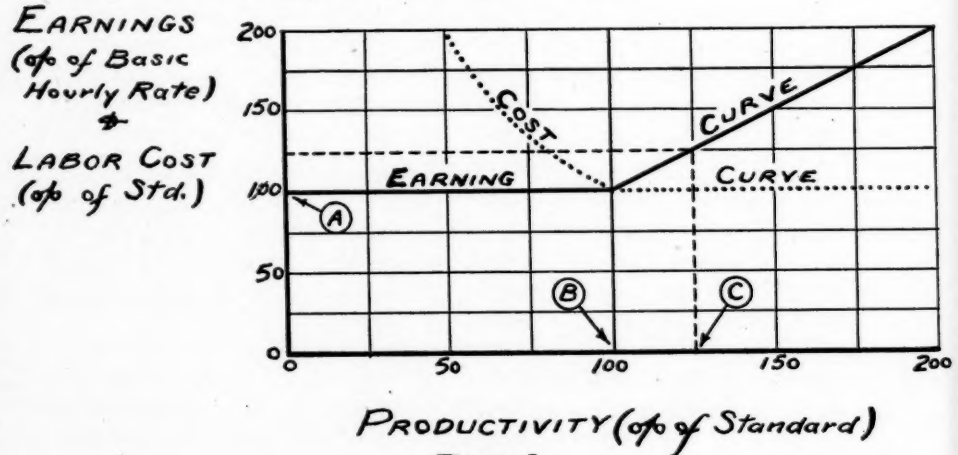

Figure I

The earning curve in the diagram (Figure I) makes clear that the basic hourly rate (100 per cent on vertical scale) is the guaranteed earning level for all production up to and including standard (100 per cent on horizontal scale). Beyond that point, earnings are directly proportional to output.

The cost curve indicates one of the prime benefits of a sound wage incentive plan of this type—namely, that direct labor cost per unit is stabilized for all work produced at an above-standard rate of production. It should be noted,

however, that although direct labor cost per unit remains constant, total manufacturing cost decreases steadily as productivity increases. At the same time, the take-home pay of the workmen continues to increase.

For production below standard, of course, direct labor cost per unit increases and fluctuates with output, just as in any day-work operation.

But if an incentive plan performs its function successfully—not only providing an incentive for workers to increase their output and therefore increase their earnings, but actually making possible the attainment of the higher production goals—then all work will be produced at an above-standard rate and the labor cost per unit will be stabilized at the low point. And as productivity increases, with direct labor cost per unit fixed, then total manufacturing cost decreases and (assuming sale of all the product) both employer and employee obtain the benefits to be derived from the enhanced competitive position of the company.

THREE KEY POINTS

If management is successfully to administer a wage incentive plan designed to obtain maximum benefits for all the company, for both employer and employee, it is essential that it grasp the significance of the points marked A, B, and C in the diagram. The determination of these points, and the fixing of their relationship, is seldom a straightforward, scientific procedure. But regardless of the type of incentive plan and the characteristics of the earning curve, these three points play an important part in fixing the *earning* possibility and hence the *production* possibility of any job.

These points may be defined and determined as follows:

A. *The basic hourly rate of pay*—determined, preferably, by some job evaluation procedure.

B. *The standard level of productivity*—determined most accurately by time study plus the application of justifiable allowances.

C. *The expected incentive level of productivity*—determined by company policy insofar as the diagram is concerned—representing that level of production expected from a normal worker, operating on incentive, for which he will receive normal incentive take-home pay.

METHOD OF CONTROL

One of the reasons for the disastrous experiences of many organizations with wage incentives is the complete lack of respect which they accord the above key points. It is not enough to fix any one or two of these points: All three must be fixed at a given time and critically examined periodically thereafter if the company's wage program is to continue on a sound basis.

Shifting the value assigned to any one of the points without examining its relationship to the other two and to the total earnings resulting from a given performance on the job is an extremely dangerous practice. Some form of practicable control of the values assigned to these points must be maintained if the incentive plan itself is to be effective.

A logical method of approach is to decide which points are most easily fixed. Point A, certainly, is one that can be determined with a considerable degree of accuracy through job evaluation. While at times it may be somewhat difficult to effect an agreement as to the exact dollars-and-cents value of the basic hourly rate for a job, it is, however, one point which may be "pegged."

Point C deserves consideration next, partly because it is generally fixed by company decision as some fixed percentage of Point B. It represents, as has been stated, the average level of productivity expected from all employees working on incentive. For this expected performance the worker receives normal take-home pay. In the diagram, expectancy is 125 per cent of standard, a generally representative figure. It is that level of effort which management believes should characterize the normal workman on incentive. Management can afford to pay such a man "normal take-home earnings."

In determining the spread between "standard performance" and "normal incentive pace" an important question arises: How great should the spread be, so that the normal workman changing from a day-work basis to an incentive method of wage determination will find it desirable and attractive enough to exert the extra effort necessary to obtain the extra earnings? Another consideration is the necessity of designing the incentive plan so that *all* employees suitably selected and trained will earn more than the basic hourly rate of pay.

Point A has been determined; Point C bears a "fixed" relationship to Point B. It remains, then, to fix Point B.

CONCEPT OF STANDARD

The significance of performance rating and time study allowances was indicated in earlier paragraphs. With the preceding material as background, the reasons for such stress upon this aspect of time study work should be apparent.

Point B represents standard performance. For a particular job this must be expressed as, or be translatable into, so many units of work per hour.

The most generally satisfactory method of determining how many units per hour should represent standard performance is to time study an operator doing the work, adjust this "actual" time by the proper rating factor, then add the appropriate personal and fatigue allowance.

Note the significance of the foregoing: The final standard allowed time for a job is developed by (1) timing an actual performance, (2) correcting this actual time for deviation from normal, and (3) adding an allowance for personal requirements and for fatigue occasioned by the job. Under unusual conditions, other allowances may be added as well.

Therefore, the significant point is that, in practice, the end-result—i.e., the standard allowed time for a job—is obtained through the use of both correction and allowance factors. The relationship between these must be such that when they have been applied, the resulting time standard will fit squarely into the pattern of the wage incentive plan as indicated by the diagram (Figure I). Thus, an operator who produces over the course of the day just

the number of pieces called for by the standard will be paid at the basic hourly rate for the job; the truly average operator will produce just 25 per cent more pieces than the standard calls for, and will earn a 25 per cent premium.

These results may be obtained only if the particular personal and fatigue allowances used bear some logical relationship to the concept of normal performance. Further examination of these factors in rate-setting should clarify the matter.

SIGNIFICANT ASPECTS OF STANDARD DETERMINATION

Determining how long the operator takes to perform each element of work (the "actual" time) during the time study is a routine, straightforward procedure. We need waste no time here quibbling about the relative merits of "snapback" and "continuous" methods of using the stopwatch, or the desirability of using the "mean" *vs.* a "selected" time to be representative of the actual time required by the operator to perform an element of work. It is essential only that the techniques used be fair, justifiable, economical, and suited to the particular job conditions where employed.

The selection and application of a rating factor, however, is a more serious matter. Here the time study observer must decide how the performance of the operator under observation compares with the performance of a "normal" operator. The relationship between these two performances—the one physically apparent, the other a mental picture—is expressed as a percentage, or by some conversion factor readily converted to a percentage. The actual time for the physical performance is multiplied by this percentage, the result indicating the time that a normal operator should require to complete the task.

Some individuals deplore performance rating as the weakest part of the standard-setting procedure. We have agreed that it is based upon judgment, but judgment may be good or bad. And since *good* judgment is largely the result of training and experience, it follows that the best time study men will have had both.

WHAT IS "NORMAL" PERFORMANCE?

Of prime importance, however, whether the time study men have little or much experience, is the necessity of fixing just as rigidly as possible that standard of performance which is called "normal." It is the "bench mark," the reference point, from which all comparisons of operator-effort must be made. While it may be expressed in terms of work, such as one-eighth horsepower per hour, or some other unit of work, to the time study man normal performance is characterized by a certain activity level, a rate of activity, a particular rythmical tempo of movement. Generally speaking, this rate of work is one at which the workman just *earns* his basic hourly rate of pay.

Obviously, such a mental concept of a rate of physical activity to be designated "normal" may differ from one individual to another and from one factory to another. Such differences do occur. One of the difficulties some-

times experienced by a time study observer in moving from one organization to another is that of adjusting his concept of normal performance to accord with that obtaining in the new location. That such an adjustment sometimes is necessary is not an indication that there is widespread disagreement as to what constitutes a normal performance. To the contrary, it may indicate that each organization merely is aware of the relationship in its particular situation between base rates, concept of normal, standards of performance, and total earnings.

In other words, as desirable as it may be to have generally accepted interplant agreement as to the tempo of work that constitutes the pace of a normal operator, it must be admitted that no such agreement does exist today. Different factories, setting up their incentive systems under the guidance of different groups of individuals, developing the plans to meet particular and sometimes peculiar local conditions, unalterably found themselves with concepts of normal performance at some variance. This was due in part, of course, to the effect of the basic hourly rate scale then existing, and the manner of treatment of personal, fatigue, and delay allowances.

As illogical or ill-advised as it may have been, the fact is that "normal performance" was not always treated as a non-variable factor in the wage-building program. Expediency, rather than unbiased objectivity, sometimes dictated the particular concept of the norm selected. Likewise, and perhaps to a greater extent, in the selection of personal, fatigue, and delay allowances, expediency has predominated.

This is not to say that local circumstances should not have an effect upon the development of the wage plan. But it is an attempt to recognize actual conditions that do affect the justness and accuracy of wage systems as measures of labor productivity. And improvement is difficult unless the facts are recognized for what they are.

EFFECT OF VARYING THREE KEY POINTS

It is evident that the same weekly take-home pay (for the same type of work) may be obtained even though differences exist in the three key points discussed above. This is true, of course, only where the differences are compensating ones.

The following table indicates the varying conditions set up on the diagram (Figure II) which result in average incentive earnings of $1 per hour in every instance (a 100 per cent premium earning curve assumed in all cases).

KEY POINT——A.....B.....C.....

Case	*Basic Hourly Rate ($)*	*Job Standard (Pcs./Hr.)*	*Spread Between Std. & Average Inc'd Performance (%)*	*Total Earnings for Average Operator ($/Hr.)*
1.	0.80	20.0	25.0	1.00
2.	0.87	20.0	15.0	1.00
3.	0.87	23.0	15.0	1.00
4.	0.75	18.75	33.33	1.00

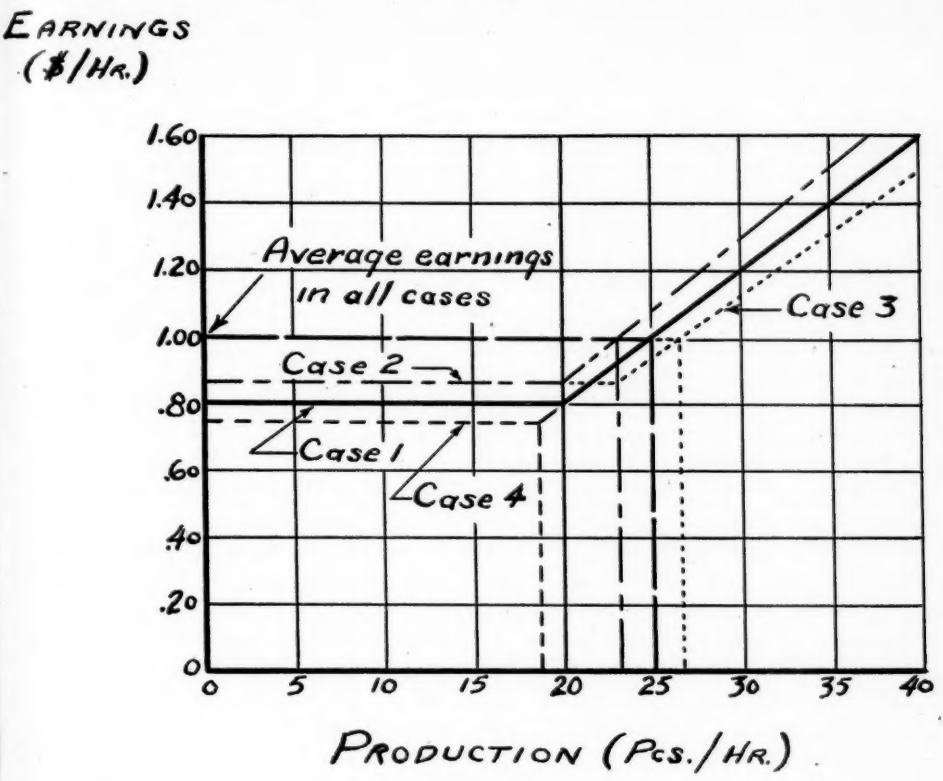

Figure II

Note that, regardless of the variations in any one of the three key points, compensating changes in one or both of the other two result in the same total hourly earnings for an "average operator" on incentive, according to the local interpretation of that term.

Case 4, above, and to a less degree Case 1, indicate a serious situation which may prove a source of increasing annoyance and extra cost as time goes on. The situation is that of a low base rate combined with a relatively loose production standard. While such a combination may result in satisfactory production costs at the moment, as basic hourly wages tend to go up toward nation-wide uniformity, and no justification appears for tightening up or correcting the production standards, it is evident that the result will be an increase in manufacturing cost. The moral, of course, is to develop and maintain production standards that are not modified in any way to meet temporary circumstances, but which will be as accurate and as usable tomorrow as they are today.

To the management of a firm contemplating the installation of a wage incentive plan, or critically reviewing a present installation, the foregoing comparisons are important, for they indicate points at which the system can get out of line.

SUMMARY AND SUGGESTIONS

Quite obviously, the fixing of the values for these three points for specific jobs is not a matter to be left to the whim of any individual time study man or foreman, or to some antiquated technique that will not stand the test of close scrutiny for its fairness or basis in logic. Instead, some easily understandable and justifiable methods must be adopted which can be defended upon their merit by both management and labor.

More and more organizations have adopted some form of job evaluation for determining the relative worth of individual jobs, thus fixing Point A in any specific instance. When this has been done, discussions regarding the relative worth of jobs (expressed by the basic hourly rate) can be based more upon facts than upon opinion.

While Point C, the expected incentive level of output, has been stated to be primarily a matter of policy, it may also be based upon certain factual data emanating from the physiological and fatigue laboratories and from a long record of productive output of operators working on an incentive basis. Twenty-five per cent above normal has been indicated as a generally accepted value.

Perhaps less has been done to tie down Point B, the standard productivity level, in terms that can be easily understood and measured. This is partly true, of course, because of the interrelationship between performance rating and personal and fatigue allowances. Such definition is possible, however, through resort to the medium of motion pictures for the recording of agreed-upon normal performances,* and to something akin to job evaluation technique for the development of fatigue allowances which take into account, on some measurable basis, the differences in the fatigue characteristics of varying jobs.** While it is admitted again that judgment must play a part in setting up the original values from which future measurements may be made, it should be emphasized that once these "bench marks" are agreed upon, future discussions regarding the accuracy of production standards will revolve more around factual data than emotional display.

* * * * * *

Time study of itself is not necessarily complicated. Its implications, however, when viewed as part of the total wage incentive structure, are far-reaching. Those in management responsible for the administration of the wage program need to appreciate these implications if the work of the standards department is to be successfully conducted.

* W. L. Ganong, "Producing Motion Picture Films for Time Study Training," *Modern Management*, Vol. VI, No. 1.

** M. E. Mundel, "An Analysis of Time Study Rating Systems and Suggestions for a Simplified Systematic System," *Industrial Engineer*, Vol. IV, No. 4.

ESTABLISHING A MODERN PLANT MEDICAL PROGRAM

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Not only is an adequate plant medical program a potent means of improving employee health and morale; it is also a paying proposition, which more than returns its cost in reduced compensation expenses, decreased absenteeism, lower turnover, etc. (One survey found that, on the average, a health program saves a 500-employee plant more than $5,000 annually.) The author of this article, who is chief physician of a large manufacturing firm, discusses the basic elements of a modern medical program and shows how its effectiveness can be measured. Particular attention is directed to the industrial relations aspects of the medical program and to problems of medical ethics.

HOW often does management insure its workmen's compensation liability with a carrier, pay its premiums, and accept the cost entailed as inevitable? The premium payments are based on the hazards each particular industry presents and on past compensation cost experience. If these monies were handled by one of the departments in the plant, management would continually seek ways of reducing such expenditures—yet at least 80 per cent of present-day companies seem completely resigned to the truly "pathetic waste of money" paid out by them in compensation. Workmen's compensation laws logically suggest a medical program in every industry, and if there is no medical program, or an inefficient one, then "pathetic waste" will inevitably follow.

Management's responsibility to its employees changed drastically when the states set up workmen's compensation laws. Prior to that time a company was not responsible for an injury sustained by an employee at work, unless he could prove in a court of law that management's negligence was a contributing factor in his injury. Now, under the workmen's compensation law, whether management's negligence contributed to his injury or not, it must furnish him with adequate medical treatment, even hospitalization and surgery if necessary; it must pay a stipulated portion of his wages weekly if he loses time, and it must pay a scheduled sum if he sustains permanent disability from his injury. In fact, the results of any accident "arising out of and in the course of his work" are the employer's direct legal responsibility. Many of the states include certain occupational diseases arising out of the work; a few states include "any and all occupational diseases." All these developments have taken place since 1910. The enactment of workmen's compensation laws and their administration are state functions, hence the several states have varied degrees of coverage. Compensation laws were originally enacted for the benefit of both the employer and the employee—*i.e.,* to protect the employer from ruinous law suits and the employee from the financial loss arising out of an injury at work. Subsequent broadening coverage and more liberal interpretation of the laws have increased the employees' protection and have thus increased the cost to the employer.

The wish to reduce compensation expenditures does not in any way stem from a desire to deprive an injured employee of his just deserts. The wasteful costs are the result of infections and other complications, of excessive loss of

time because of the absence of a rehabilitation program, of payments of spurious claims, and many other causes.

When an employee appears at a compensation hearing and swears that his condition was non-existent before he was hired, the Compensation Commission will accept his word unless it can be proved false. How can the employer hope to refute fraudulent claims unless he has had his employees examined before hire? The saving in proving one preexisting hernia case, for instance, will probably pay for over one hundred preemployment examinations.

When an employee is injured and management simply tells him to "go see his family doctor" he may neglect to do so, thus inviting infection or other complication. He may go to a general practitioner whose experience in industrial medicine and traumatic surgery is decidedly limited. Since the employer must pay for the prolonged convalescence and the poor end-result, is it not more logical to provide immediate and adequate medical care?

When the compensation laws make the employer liable for an occupational disease contracted from an exposure in the plant, management is inviting further waste of money when it permits such toxic exposures to continue. Is it not more intelligent to set up a simple industrial hygiene program to minimize illness and injury arising from work?

The present broadening coverage of compensation laws and their increasingly liberal interpretation makes the need for a medical program now even more urgent. Will management continue to accept as inevitable the wasteful expenditures in compensation costs that a medical program can reduce?

SCOPE OF THE MODERN MEDICAL PROGRAM

The basic elements of a modern medical program are preemployment examinations, facilities for the care of the injured employee, periodic examinations and an industrial hygiene program.

The preemployment examination lays the groundwork for an industrial medical program. It initiates the employee's plant medical record; it rules out those with contagious disease or with certain specific conditions that will render them unfit for factory work. It permits accurate placement on a job commensurate with the applicant's physical abilities. It lists preexisting conditions to refute subsequent fraudulent claims, and it discloses remedial defects, treatment of which will improve the health of the worker.

In a small industry placement must be accomplished by one who knows the physical demands of each job. In a large industry this can only be accomplished by an analysis of each job to include its physical demands and working environment. The United States Employment Service has drawn up very satisfactory forms to facilitate such job analysis, and their fundamentals have been widely used in industry during the war. With such a job analysis and a parallel physical capacities appraisal by the examining physician, an employment interviewer can place with considerable accuracy the new employee in a job that fits his limitations.

When such a preemployment examination is undertaken it must be thorough for obvious reasons. A recording in some detail of existing disabili-

ties is absolutely necessary in compensation liability since systems or parts not examined are considered negative and hence free of preexisting conditions by the compensation court. Moreover, the employer cannot assure safe employment of the applicant unless *all* of his defects are known. A routine urinalysis and blood Wassermann test should be part of the examination. A chest X-ray should be included if facilities permit or if the industry entails specific dust hazards. Even listing of ranges of motion in previously injured fingers or other joints is of value in apportioning disability if the applicant sustains further injury in the course of his employment.

STAFFING AND EQUIPPING THE MEDICAL DEPARTMENT

The second basic element of a medical program is the care of the injured employee. Ideally, all necessary facilities should be included in the medical unit. However, this must necessarily vary according to the size of the plant. A plant of 250 employees must limit its equipment to the simple essentials, whereas a plant of 3,000 or over can benefit by the purchase of several physiotherapy modalities, an X-ray unit, and other types of equipment. It is simple mathematics to prove that a sizable plant will save money by the purchase of an X-ray unit since the cost of X-ray of from $5 to $15 per case can thus be reduced to $1.50 to $2. The number of patients X-rayed will, of course, determine the saving involved. When an X-ray unit is on hand, more cases are X-rayed because the equipment is readily available. Thus fewer fractures are overlooked and improperly treated, and further saving through better medical care is a direct result. Similarly, the purchase of an inexpensive infra-red lamp will save manpower hours and medical expense, even though the volume of cases requiring it may be relatively small. The size and extent of the medical department is dependent upon the plant population and the type of industry. It has usually been found that the basic fundamentals of a medical unit will require expansion within a year after the program is begun, as employees come to recognize its availability and its value to them.

In general, one can estimate that 500 employees will keep one nurse busy full-time and 2,000 to 3,000 employees will keep one doctor busy full-time. Individual requirements can, of course, be scaled up or down from this base.

For the smaller plants a working rule of thumb is as follows: A doctor will be kept busy three hours per week per hundred employees and a nurse nine hours per week per hundred employees. Over-all costs have been estimated at $13 to $17 per employee per year for a medical program. Where size requires three nurses or a multiple of this, two nurses and a clerk will generally function equally well with less salary expenditure, since an industrial nurse spends over one-third of her time in record-keeping.

It is of utmost importance in plants of smaller size to make certain that the nurse is acting under the direct supervision of a licensed physician. An industrial nurse has no license to practice medicine; however, she can minister to the employees according to the signed "standing orders" of the physician to whom she reports.

It should not be necessary to point out that, however extensive and well-equipped the medical unit is, occasionally it will be necessary to engage the services of medical specialists for consultation on individual cases. These should be used without stint where necessary to assure speediest possible recovery and to prevent the occurrance of complications arising from a plant injury. Referrals to specialists depend entirely upon the breadth of training and experience of the industrial physician.

IMPORTANCE OF PERIODIC CHECKUP

Although the preemployment examination furnishes basic medical knowledge about an employee, there is no assurance of its continued accuracy unless it is followed up with periodic examinations. Such periodic examinations are indicated especially for those employees who are subjected to toxic hazards on their jobs so that it will be possible to detect the earliest indication of toxic effects and remove the man from such exposure. Periodic examinations of the executive force and key personnel are also of particular value. Life insurance statistics have shown that periodic medical examinations actually can prolong the useful life of an employee by 25 per cent. If he is a key person in the organization, the value of repeated health checkups is obvious. Such examinations should be followed by recommendations for correction of remedial defects.

It has been customary in many industries to conduct a yearly physical examination of key employees, an examination of the general plant population once every one or two years, and an examination of those exposed to toxic hazards every three to six months. Where the toxic exposure is particularly great, it may be necessary to conduct examinations at more frequent intervals. A concrete reason for such periodic checkups is evidenced in the following: A large corporation was not convinced that periodic physical examinations would pay for themselves until a robust guard whose blood pressure was normal at the time of hire suddenly had a stroke, due to marked high blood pressure, when he was driving an employee home in the company ambulance. He and the attendant were killed and the patient was badly injured. The total cost of that one accident would pay for several thousand examinations.

THE INDUSTRIAL HYGIENE PROGRAM

An industrial hygiene program is one of the basic elements of an industrial medical program that is often overlooked. The foundation for industrial hygiene begins in a plant survey to determine toxic exposures, concentration of fumes and dust hazards, the adequacy of plant sanitation, and other industrial medical liabilities. This survey can be undertaken by the plant medical department if it is sufficiently large and adequately staffed. Many compensation insurance carriers are able to undertake such hygiene surveys; the Mellon Institute will conduct such a survey for member companies; and, of course, such services may be performed by consultants in the field of industrial hygiene.

An industrial hygiene survey brings to light danger points in the plant

which may lead to illness or injury, and is aimed at furnishing a basis for specific correction of hazards. Repeated surveys at six- to 12-month intervals are necessary as production methods change. Such a survey will result in greater cooperation between the medical and safety divisions. The need for this cooperation cannot be over-emphasized, for its absence in one division diminishes the effectiveness of the other.

Health education, an important part of industrial hygiene, is frequently carried on without being labeled as such. Every time an employee asks the industrial nurse or physician for advice on medical matters, health education is being given. The effectiveness of pamphlets and talks on health has been questioned by many, but these have been developed to a great degree by some companies. An article on current health problems by the company physician in the plant weekly or monthly paper is a good method of educating employees in health matters.

We have briefly discussed a few of the reasons why compensation laws logically suggest that management set up a medical program and have outlined some of its fundamentals. Now let us consider some of the industrial relations aspects of such a program.

BENEFITS TO MANAGEMENT, WORKERS, AND UNION

It should be emphasized at the outset that a medical program is a very powerful factor in developing either good or bad industrial relations. At the outset, the program should be supported by publicity indicating that its purpose is the welfare of the employee and the improvement of employee health. This will indeed be its purpose, though it may have been originated through a desire to avoid wasteful expenditures under the articles of the workmen's compensation laws. The healthy employee is of much greater value to management than is the ailing worker and very little added effort beyond that which protects the employer's compensation interests is needed to improve workers' health. It is strongly to be urged that such publicity be utilized when the program is started because at that time, surprisingly enough, the employee often feels that the medical program is to be used against him, to deprive him of a job or of his just recompense under the law.

As the medical department develops, it will furnish a common meeting point between management, the employee, and the union. If the medical department is functioning well, the employee considers it entirely apart from management as such, and looks to its members as a group who have his interests at heart; the union will accept its recommendations and decisions as coming from an impartial group whose prime interest is the physical and mental welfare of the employee; and management will find in it an answer to many of its personnel problems.

The employee who is dissatisfied with his job, his supervisor, his shift, or his surroundings often reacts with physical distaste. He considers the job too strenuous or the hours wrong, or the surroundings too dusty, and he approaches the medical department with a request for work change on medical grounds. The industrial physician who is alert to such a reaction always in-

quires further into the man's mental responses to his job, his supervisor, etc. He can thus uncover situations affecting morale and production and incorporate into his approach the simple applied psychology of the personnel counselor; he can steer the employee to the counselor if the organization has one.

ENLISTING UNION AND WORKER SUPPORT

After a medical department is well established it should have gained the full support of the union. The union and the physician both have the same purpose in industry, viz., to work for the good of the employee. Thus the plant physician has a valuable approach to union demands that is denied management. In the beginning it is common for the union to come to the medical department and demand justice for the employee. If the physician's decisions are fair and just, as they must be, he should welcome visits by union representatives to explain to them the reasons for his decisions. It has been found that this results in an understanding by the union representatives that only fair and honest decisions are made by the medical department and their questions will diminish; in fact, they will often defend the decisions of the medical department to the employee. On the other hand, the physician must never make an ill-considered decision and then reverse it under union pressure, for then the employee is led to believe that he will not be fairly treated unless he brings along the union steward for bargaining.

Management often finds personnel problems that have an unexpected medical facet. Consider the employee who had been a good worker, but whose work became so poor that his supervisor was about to discharge him for incompetence. The medical department found that he had a serious condition which adequate treatment by his family physician completely cured and restored him as a valued and useful employee.

Physicians associated with industry frequently tend to develop an attitude of tactless scorn and disbelief—the feeling that all complainants are "goldbrickers" and that it is not worth the effort to display interest in the employee and his progress. No single thing will more seriously affect the employee's opinion of the medical department. His reaction is, "They don't care what happens to me." Nothing will so negate the functions of the medical department, since industrial medicine's effectiveness decreases in proportion to the employees' lack of faith in its adequacy and honesty. The effect is as ruinous as it would be in private practice.

Scarcely any division in the organization can more adversely affect industrial relations than the medical department. The situation became so serious at one large plant that the union refused to sign a contract unless the incumbent medical director was discharged.

Strangely enough, the way he is treated in the medical department indicates to the employee what management thinks of him as an individual. If he is courteously and conscientiously treated, his reaction is, "Gee, management really does care what happens to me." If he is "kicked around" by a disinterested physician or nurse his attitude is, "They don't give a hoot about what happens to me." This reaction is universal and unavoidable in industry. A

company that has a tactless, inefficient medical department will never attain ideal industrial relations.

ELIMINATING WASTEFUL EXPENDITURES

A major difficulty for the industrial physician arises from attempts to reduce compensation costs and still maintain good industrial relations. The only approach to this difficulty is to establish the major premise that the employee will be furnished everything he is reasonably entitled to and that only the pathetic waste of money that comes from poor control of cases and improper handling will be stopped. The employee and his supervisors may not have been adequately taught the need for immediate reporting and treating of all injuries, however trivial. Such neglect may permit infection to develop and can increase the number of permanent disabilities and the total time lost. Wasteful expenditure may be further increased if the industrial physician is inadequately schooled in the proper handling of industrial traumatic cases or is lax in the care of the cases, or not alert to the early recognition of complications.

One of the greatest causes of wasteful compensation expenditures lies in the philosophy that the employee cannot return to work until he is fully able to do his job. Statistics show that the injured worker under the care of a general practitioner is absent from three to five times longer than is the worker who is cared for by the industrial physician. A program for the early return to work of the injured employee will immediately decrease wasteful compensation expenditures as well as conserve valuable manpower. The average employee with simple back strain, for example, will lose two to six weeks work if he must wait until he is able to perform his full job. However, his knowledge and his limited physical ability can be used to good advantage if light work can be found for him during the convalescent period. Aside from stopping compensation payments for lost time, and providing him with his salary instead, such placement prevents him from spending 24 hours a day, over a period of weeks, convincing himself that the company has ruined him for life, that he will never be the same, and that he certainly will never subject himself to such physical effort again. The employer may never get such a worker back on his old job after he has been given so much time for brooding. In fracture cases convalescence may be prolonged, and placement of the employee in limited work will provide occupational rehabilitation for earlier and more complete restoration of function, resulting in smaller permanent disability awards.

It has been argued that it is cheaper to pay an injured worker compensation than to allow him to return to limited work and pay his salary. This argument is fallacious because during the worker's absence, the company is deprived of all his production effort, though its cost continues. By paying him weekly compensation benefits during a prolonged convalescence, the employer is permitting costly traumatic neuroses to develop and is helping to create higher compensation awards for greater permanent disability. Aside from the loss of valuable production effort, the expenditure in compensation will be reflected in increased compensation premium over a considerable period

of time. The establishment of a program which permits temporary light work assignment for injury cases will immediately and considerably affect the company's compensation expenditure.

MEASURING THE PROGRAM'S EFFECTIVENESS

The best way to determine the adequacy of medical department activities and control of cases is to make statistical analyses of cases and compensation cost trends. Regardless of the size of the medical department, a monthly review of case statistics and compensation expenditures is the only effective device for determining whether or not the department is performing its function. A high incidence of infection cases may disclose the need for earlier reporting of injuries and should stir the physician to concentrate on the medical problems connected with their control. The cost of eye cases may be found to be unduly high, indicating the need for a safety goggle program. A low rate of visits to the medical department may reflect employees' lack of faith in the medical department. Roughly one visit per month to the plant medical facility by each employee is to be expected. Analyses may show a high revisit rate, compared to the number of new injuries listed, pointing to over-treatment of cases or to abuse of medical privileges by employees who visit the medical department for a rest and smoke. Though individual case figures will vary, the average ratio of new injuries to revisits should range between 1 or 1.5 to 1.3. The allocation of a sizable part of the over-all compensation cost to one department or area will suggest the need for a serious study of this area with a view toward installing further safety precautions or providing further safety training for the supervisors and employees in this area. Rising compensation costs with a medical program in effect may suggest a serious revision of the department. Mounting costs arising from hernia cases will point out the need for more thorough preemployment and periodic examinations, and perhaps further installations of hoists on heavier jobs. These and a host of other worthwhile points will arise out of a careful monthly study of case statistics and compensation costs.

COOPERATING WITH THE INSURANCE CARRIER

In this statistical study the compensation insurance carrier can be of considerable help in pointing out those expenses which are inevitable and those which may be reduced, and in informing management of the ratio between the company's costs and the costs of other similar industries in the area. Close cooperation between the medical department and the compensation insurance carrier is necessary if the company is to provide efficient medical service. Prompt reporting of compensable cases to the carrier by the medical department permits early payment of lost-time benefits and prompt insurance investigation of questionable cases. Misunderstandings easily arise between the medical department and the carrier unless the two work closely. An overworked medical department may be late in reporting cases, suggesting to the carrier a lack of cooperation. On the other hand, the carrier's recommendation for improvement in the medical activity may be interpreted as interference

with industrial medical functions. The tactful suggestions which the carrier may offer for improvement in the medical program should be considered seriously, since the insurance carrier is in a position to see the over-all industrial and compensation picture, can analyze and interpret medical effort in similar industries, and can evaluate compensation losses in the light of existing compensation bureau practices.

INDUSTRIAL MEDICAL ETHICS

The problem of medical ethics in industrial medicine has been widely discussed. Industrial physicians have varied in the strictness of their adherence to the rule that medical data is confidential and cannot be disclosed without the patient's permission, since such disclosure leaves the physician open to malpractice suit. Legal advice on this point varies in its interpretation of how far "professional secrecy" applies to industrial medicine. Aside from the question of legality, it is in the interest of good patient-physician relationship in industry to maintain, to some degree, the confidential nature of the employee's medical record. The compensation carrier must necessarily have access to the medical record. Supervisors should not, however, demand detailed knowledge of an employee's condition. The physician will want to explain fully his medical decision concerning an employee to the man's supervisor but he should not, since the details of the patient's ailment should be considered confidential information. However, an indication of the physical status of the employee, such as a weight limitation or other physical capacities appraisal, must be freely given where needed.

In discussions where the employee has invoked the aid of the union, the physician feels freer to disclose more detailed medical data. However, here, too, it is advisable to obtain the express permission of the patient before making such disclosures. The physician may say to the patient: "You understand that to reach a conclusion between management, the union, and yourself, I must apprise them of your condition—since they cannot reach an equitable decision without all of the facts. If you wish me not to discuss your condition here, then they cannot reach a conclusion themselves and must accept my decision in the matter." The employee will then almost invariably free the physician from the obligation to maintain professional secrecy.

A particularly difficult problem in industrial medical ethics arises, for example, when a case of syphilis is found in a cafeteria worker. This requires especially tactful handling, and it must be taken up directly with the patient alone. When such a case is disputed by the employee, or union aid is sought by the worker, the backing of the Board of Health is of inestimable value, since it is an impersonal, authoritative department of the state.

INDUSTRIAL MEDICINE AND PUBLIC RELATIONS

The public relations aspects of industrial medicine depend, in part, on the relationships existing among the industrial physician, the general practitioners, and state health agencies in the area. Unfortunately, some degree of animosity had frequently been felt by the general practitioner toward the

industrial physician. He felt that the company doctor was taking cases away from him, or was offering medical advice and treatment that he, as family physician, should be giving. This arose partly from lack of mutual understanding and partly from the industrial physician's practice of treating "non-company" conditions. However, this resentment is subsiding now because very few industrial physicians are continuing to treat non-company conditions, but refer these cases to the family doctor. It is further subsiding because the general practitioner is awakening to the fact that industrial medicine represents an enormous case-finding program for him. Many cases that he would not see, or would see too late to effect a cure, are being referred to him now from company health establishments.

Public relations are well served by a good medical program since the reputation of the industry among the population in the area becomes, "They take good care of you in that plant."

SELECTING THE INDUSTRIAL PHYSICIAN

Obviously the hub of the medical program, whether it be simple or elaborate, is the industrial physician. It is unfortunate that medical schools still do not include the fundamentals of industrial medicine in their curricula and that very few post-graduate courses in this field are offered. For this reason, well-trained industrial physicians still must learn through apprenticeships, or must grow up in the industrial medicine field by trial and error. However, a few good post-graduate courses in this specialty are now being offered.

The most serious mistake one can make in initiating an industrial medical program is to select, as company physician, a young neighboring practitioner who has no interest in industrial medicine and wants the job only until his general practice develops to a point where it will support him. It is a mistake to choose a relative of a company executive who is interested only in the added income the job will provide, or to hire an elderly physician who has been unable to develop a satisfactory private practice and who may be well behind modern developments in industrial medicine and surgery. If he can be found, the physician to be selected is the man who has chosen industrial medicine as his specialty, who really has an interest in it, who can see that it is the field of medicine with most promise for pioneering good, and who intends to make it his life's work. Of all of the traits he should have, none is more important than tact and diplomacy. Obviously, he should be a graduate of an accredited school and have a well-rounded background of medicine. He need not be a specialist in surgery or orthopedics or internal medicine—in fact, he will perhaps serve the company best if he is not. He should be expected to have some training in industrial medicine. He should be in good standing in the medical fraternity. Aside from a hearty interest in the development in his specialty, he should have those traits that management seeks in a good organizer and director in any special field.

If the industry is large and is employing a full-time physician, management is in a position to choose carefully, since it can offer good facilities and the type of broad program that will attract the better physician. If the

organization is small and in a community of small industries, the company's purposes will best be served through a clinic which pools the medical efforts of several small companies. Where available candidates for the job have not been specifically trained in industrial medicine, management will perhaps be able to judge a doctor's interest in this field by his willingness to spend two to four weeks taking a post-graduate course in industrial medicine.

In conclusion, it should be remembered that the present trend toward broader compensation laws practically demands that management protect its own interests by setting up a medical program. Fundamentally, it is not difficult to do so. In addition to all its other merits, the industrial relations value of the program is incalculable. And, finally, since its success depends in great measure on the competence of its director, management's choice of physician is the key to the effectiveness of a modern industrial medical program.

MEASURING THE VALUE OF TRAINING

By O. L. HARVEY

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How can training directors demonstrate the efficiency of their programs in quantitative, factual terms? This question embraces a specific aspect of the more general problem of evaluating personnel work, discussed in the opening article in this issue. While training values admittedly cannot be measured with mathematical precision, Mr. Harvey shows how convincing evidence can be adduced and presented to top management.

YOU have set up a training program. You think you have done a pretty good job. But how do you know that it pays? Can you prove to your executive committee, at least with reasonable certainty, that the training given has been worth while?

You are not the only person to ask himself these questions. Any training director worth his salt is concerned about them, for they represent not only a demand for the justification of his own contribution but also a problem that should be of paramount interest to management in meeting the challenge of this highly competitive postwar era. Training expenditures *must* be justified; every effort must yield measurable results. How, then, are you going to prove your case?

UNIT OF MEASUREMENT

Various fields of measurement are open for exploration, but among the most obvious and easily determined are:

1. Decrease in time required to bring workers up to required production capacity

2. Increase in production
3. Reduction in percentage of scrap or rework
4. Reduction in man-hours lost through accidents during first 1,000 hours of employment.

PROBLEMS OF PROOF

The problem, of course, is to prove that improvements recorded are in actual fact attributable to training, and training alone. This means that the evidence submitted must exclude improvements that result from such things as reorganization, alterations in plant layout, engineering, etc. To discount the influence of all of these factors is obviously impossible under ordinary operating circumstances, with the result that one has to depend, in large measure, on common sense and good judgment. The process of reasoning out one's argument should be at least plausible, and the conclusions should not be stated too positively. You probably will not be able to prove your case to your complete satisfaction, but at least you should try to present a reasonable argument, which in itself is part way to conviction. Consider, then, how you could present some of your evidence.

REDUCTION IN TRAINING TIME

Record average time taken (in hours) to bring inexperienced workers employed on this type of operation to average production output:

(a) Shortly before this training program was introduced
(b) At present (i.e., after this training program was put in operation).

The difference between (a) and (b) represents the measure of reduction in training time.

PRODUCTION INCREASE

Here your problem is to prove that, as a result of training, production has increased. This means that you have to show: (1) that, subsequent to the introduction of the training program, production has increased, and (2) that this increase is due to training and to no other factor.

To provide this evidence, you need to study the production records of two groups of workers: (a) those who have been trained under your training program, and (b) those who have not.

Confining your observations to workers doing the same general kind of operation as that at present being performed by workers who have completed your training program,

1. What is the latest weekly production:
    a. Per average worker who has completed that training program?
    b. Per average worker who did not go through that training program?
2. What was the production of the average worker performing similar operations during the week immediately preceding establishment of the training program?

The difference between answers to (1-b) and (2) will approximately represent change in production due to factors other than training; that between (1-b) and (1-a) will approximately represent change due to training alone.

SCRAP REDUCTION

Compute percentage of scrap per average worker doing this type of operation, for:

(a) Workers who have *not* received training under this program
(b) Workers who *have* received training under this program.

The difference between (a) and (b) represents the reduction in percentage of scrap due to training.

REDUCTION IN MAN-HOURS OF LOST TIME

Compute the average number of man-hours lost due to accident during the first 1,000 hours of employment of all new workers doing this type of operation:

(a) Shortly prior to introduction of this training program
(b) At present (i.e., after this training program was put in operation).

The difference between (a) and (b) represents reduction in man-hours of lost time attributable to training.

Many other items probably could be measured in like manner. Offered as suggestions are: Reduction in maintenance cost of machinery and tools; reduction in breakage and damages; and reduction in man-hours of supervision and inspection.

YOUR REPORT

Summarizing your findings, the report you present to demonstrate the efficiency of your training program could read as follows:

Due to the introduction during.....(month and year).....of our present training program for.....(occupation).....workers:

(a) Training time required to turn out workers of average production output has been reduced from.....hours per trainee to.....hours per trainee.

(b) Production per average trainee developed through the present program is.....units as compared with.....units for the average employee doing similar work but who has not been put through the present training program.

(c) Workers trained under the present program average.....percentage of scrap as compared with an average of.....per cent for workers who have not been put through the present training program.

(d) Average man-hours lost due to accidents during first 1,000 hours of employment after training period is.....for workers trained under the present training program as compared with.....for workers who have not been put through the present training program.

TRAINING THE EVALUATION COMMITTEE IN FACTOR COMPARISON JOB EVALUATION

By EDWARD N. HAY*
Personnel Officer
The Pennsylvania Company

In this second of a series of articles on the factor comparison method of job evaluation, Mr. Hay shows how careful training develops a high degree of agreement among evaluators—*perfect* agreement in 65 per cent of the cases. Training is accomplished by having members of the evaluation committee perform practice rankings and "weightings" on each factor, after which they progress to actual rating of their own key jobs.

ALL evaluation, by whatever method, is accomplished by applying judgment to the facts in each case. If this is so, then *successful* evaluation presupposes that different judges would arrive at the same answer from the same statement of facts. It is characteristic of factor comparison job evaluation that dependence is never placed on a single judgment, or even on one man's judgment no matter how many times it has been checked. Rather, evaluations by factor comparison are based on the pooled judgments of a group of evaluators, usually five to 10, all expressing their opinions simultaneously and separately from the same set of facts. In order that these several judgments may coincide, it is essential that the evaluators work in the same way and view the facts regarding each job similarly.

To do this:

a. Each evaluator must see the same thing when he looks at a job description. From this it goes without saying that job descriptions must be accurately written and skillfully expressed.
b. Each of the factors by which jobs are measured must be clearly and concisely defined and must be understood in the same way by all evaluators.
c. Given conditions "a" and "b," evaluators must compare one job with another to determine which requires the greater degree of each factor.

After many years' experience with all kinds of methods and in scores of different situations, the writer has learned that it is easier to evaluate jobs accurately by comparing them with one another than by using defined scales, such as are employed in point methods. With this in mind, evaluators are trained to make the most accurate differentiations between jobs that are possible, and their training is centered on this aim.

GOOD JOB DESCRIPTIONS ESSENTIAL

As has been stated, the first condition for good job evaluation is to have good descriptions. Logically, therefore, training of evaluators should be started by giving them some exercise in actually writing job descriptions. We employ a "Job Writing Guide" for this purpose, which gives standard methods of

* The author is also head of the consulting firm of Edward N. Hay & Associates.—Ed.

arrangement, phraseology, and other guides to the writing of good descriptions. The training of raters is begun by furnishing them with a copy of this guide and samples of a number of good descriptions. All evaluators are then asked to formulate a description of a simple job, such as that of receptionist or elevator operator. These descriptions, all of the same job, are read aloud in meeting and the strong and weak points of each one brought out through group discussion. The chief job analyst, or some other person, then assembles in one description the best features of all the samples, and this is submitted as the ideal description for criticism and further suggestion by group members.

In the meantime, the persons who are being trained to write job descriptions will begin to write descriptions of the "key jobs." Key jobs, to the number of about a dozen, are those which will be used to construct the first set of factor scales against which all other jobs will be valued. In some instances we use jobs from low-salaried to high-salaried levels, representing different departments and functions. Sometimes, however, we employ a set of jobs from low value to high value all within the same department. The latter process is somewhat easier because, since the jobs are much alike, they can be more readily placed in proper rank order. Either method may be used. When the descriptions of the key jobs are completed, they are laid aside until the evaluating committee is ready for them.

THE USE OF "TRAINING JOBS"

Each job evaluator is now furnished with a set of descriptions of what we call the "training jobs," which are the ones with which he will receive his training as an evaluator. These "training jobs" at The Pennsylvania Company, where the first installation of salaried factor comparison was made, have changed very little in content and value through the intervening nine years. The point values of these jobs, shown in Exhibit I, have, however, been perfected as a result of experience in more than a score of subsequent job evaluation installations. This considerable experience has enabled us to develop

EXHIBIT I

"Training Jobs" and Their Factor Point Values

JOB NO.	JOB TITLE	M	S	R	P	WC	TOTAL
1218	Elevator Operator	10	11	15	17	6	59
400	Junior File Clerk	15	20	15	13	4	67
454	Typist, Analysis	20	23	15	13	4	75
1235	Senior File Clerk	23	27	17	13	4	84
832	Typist, Personal Property Tax	27	31	23	11	4	96
1253	Purchasing Clerk & Stenographer	31	36	23	11	4	105
827	Secretary to Manager, Tax Dept.	36	41	27	11	4	119
875	Senior Tabulating Operator	27	36	23	15	5	106
1408	Senior Payroll Clerk	36	36	36	11	4	123
1455	Supervisor, Central Transcription	47	47	53	11	4	162
1309	Expense Control and Budget Clerk	61	61	53	11	4	190
878	Supervisor, Tabulating	70	70	81	11	4	236

NOTE: The column headings M, S, R, P, WC refer, respectively, to the five factors of Mental Requirements, Skill Requirements, Responsibility, Physical Requirements, and Working Conditions.

increasingly more accurate weightings of the five factors relative to each other. The scales and their values for the two factors of skill and mental requirements have remained unchanged.

The next task for the job evaluation committee is to become familiar with the training jobs. This is done by having the chairman of the group read the descriptions of the jobs and get the group to discuss them in detail, so that everyone becomes completely familiar with them.

THE FIVE FACTORS

The next assignment is to learn the definitions of the five factors, which are as follows:

Mental Requirements
Skill Requirements
Responsibility
Physical Requirements
Working Conditions

The definitions of these factors differ slightly from those given in *Manual of Job Evaluation*.* This is particularly true of Mental Requirements and Responsibility, though essentially they are the same factors as before. The newer definitions are easier for the evaluators to understand and to use in differentiating jobs.

The evaluators are next asked to consider each job in turn and to express their opinions as to the percentage of the salary of each position that could be said to be paid for each of the five factors. For example, the most important characteristic of a routine watchman's job is usually responsibility, and this factor will therefore probably receive the largest pecentage assignment. A beginner typing job will receive most credit for skill because a beginner cannot handle complicated problems calling for a high mental requirement, nor can she assume any great responsibility; but good skill is essential. She has worked in business school for a period of months to acquire her typing skill, and this certainly will justify assigning the greatest percentage of total value to that factor. Again, a day laborer will certainly receive his greatest credit under the factor of physical requirements.

After learning how to differentiate the factors for each of the training jobs, the evaluators will be told the actual point values of four of the jobs and will be asked to apply their percentage breakup among the five factors and convert it into actual points. The value of this exercise is illustrated in the case of a high-salaried and a low-salaried clerical position. Most such positions would normally carry about the same number of points credit for physical requirements and for working conditions, but would have quite different figures on the other three factors. This is likely to be lost sight of when only percentages are used. For example, suppose that one position has a value of 100 points and another of 300 points. Both are clerical positions with identical working con-

* *Manual of Job Evaluation*, by Eugene Benge, S. L. H. Burk, and E. N. Hay (Harper & Brothers, New York, 1941).

ditions and with the same physical demands. In the case of the 100-point job, let us assume that the physical requirements were assigned 20 points and working conditions 15 points. It is evident that the high-salaried position must have the same point values for these two factors. In the first case, however, the value of physical requirements will be 20 per cent and in the second case it will be only 6⅔ per cent. The working conditions value will be 15 per cent in the first case and 5 per cent in the second case, though the number of points in each instance is 15.

After the total points of each one of perhaps four jobs have been assigned to the five factors, the averages of the judgments of all evaluators are compared with The Pennsylvania Company figures to test their skill. This operation is not so accurately performed as the ranking, described later, but it is interesting to see how often a new evaluating committee approximates the correct values. (See Exhibit II. The figures shown are actual ones submitted by the evaluating committee of a large paper manufacturing company.) The purpose of these exercises, as already indicated, is to acquaint the evaluators with the characteristics of the 12 training jobs and to enable them by practice to understand the definitions of the factors and to differentiate one from another in various kinds of jobs.

RANKING JOBS BY FACTORS

Factor comparison is essentially a ranking method. The next exercise therefore is a ranking operation and is the most important one in the evaluating process, as it is also the most accurate. To accomplish it, evaluators consider all positions but think of them on the basis of but one factor, such as skill. In considering the skill of each position, the evaluators select the ones requiring the least and the greatest skill and arrange all the others in proper sequence in between. In the same way the evaluators rank the training jobs on the

EXHIBIT II

Distributing "Points" (or Salary Dollars) Among the Five Factors

(Job No. 878—Supervisor, Tabulating)

EVALUATOR	*Mental Req.*	*Skill*	*Responsibility*	*Physical Req.*	*Working Conditions*	DIFFERENCE FROM STANDARD
Cox	70	70	60	30	6	42
Stetson	90	50	70	15	11	62
Crown	75	50	75	13	23	52
Taylor	50	68	100	10	8	46
Titus	50	75	90	10	11	42
Bond	70	30	128	5	3	94
Carpenter	79	69	80	5	3	18
Gordon	60	60	70	25	21	62
Total	544	472	673	113	86	
Average	68	59	84	14	11	28
Pennsylvania Co. Values	70	70	81	11	4	

other four factors. After each factor has been ranked, however, there is a pause for discussion of differences among the individual evaluators. Each evaluator is asked to submit his opinion of the correct rank order in writing to the chief job analyst, who assembles these opinions on a single sheet, as shown in Exhibit III. (The figures in this table are actual ones submitted by a gas light company in a large Eastern city.)

MEASURING THE SKILL OF EVALUATORS

It is important in this training work, as in any kind of teaching, to measure the degree of skill attained by each evaluator. This is done, as shown in Exhibits II and III, by comparing the aggregate differences in the figures for each rater with the proper figures for these training jobs as they have been used for nine years at The Pennsylvania Company. Obviously the evaluator with the lowest aggregate difference is the most accurate. It will be noted in Exhibit III that the average rank order of this group is closer to The Pennsylvania Company rank order, in terms of total deviation, than is the case for any single evaluator except one. In Exhibit II likewise only one individual was closer than the average of the group. This illustrates one of the characteristics of "pooled judgment"—that the average of the group is usually more accurate than the work of any single evaluator.

The evaluators' training has now proceeded to the point where they have accomplished the following:

a. They have become familiar with the training jobs.
b. They have learned the meanings of the five factors and how to distinguish them from each other in any given job.
c. They have learned the characteristics of a good job description.
d. They have developed such skill through practice with the training jobs that they all arrive at approximately the same result when performing one of the evaluation operations.

THE KEY JOBS

It is now in order for the evaluation committee to consider their own jobs and take the necessary steps to develop the five key factor scales from which

EXHIBIT III

Skill Ranking

JOB No.	EVALUATORS IN THEIR RANK ESTIMATES												AVERAGE	PENNA. CO.
	A	B	C	D	E	F	G	H	I	J	K	TOTAL		
1218	2	1	1	1	1	1	1	1	1	1	1	12	1	1
400	1	2	2	2	2	2	2	2	2	2	2	21	2	2
1235	3	3	4	4	4	3	4	3	3	4	4	39	3½	3
832	4	5	3	3	3	5	3	4	5	3	3	41	3½	4
1253	5	4	5	5	5	4	5	5	4	5	5	52	5	5
1408	7	7	7	6	6	6	6	6	6	6	6	69	6	6
1455	6	6	6	7	7	7	7	7	7	7	7	74	7	7
878	8	8	8	8	8	8	8	8	8	8	8	88	8	8
DIFFERENCES IN RANKS	4	4	4	2	2	2	2	—	2	2	2		1	

Exhibit IV

JOB EVALUATION RECORD

Name Robert W. Porter Date May 15th, 1946

JOB No.	JOB NAME	M	S	R	P	W	TOTAL	REVISED
400	File Clerk, Central File	15	20	15	13	4	67	
875	Tabulating Operator	27	36	23	13	5	104	
1408	Payroll Clerk	36	36	36	11	4	123	

all other jobs can be evaluated. First it is necessary to become fully familiar with the facts about their own jobs. This is accomplished by having the dozen or so "key jobs" read aloud in committee meeting and discussed fully by the evaluators until they are clearly understood. The next step is to rank the new key jobs five times, once according to each factor. This is done in the same manner as with the training jobs. For example, in the case of the skill factor, the job descriptions are examined to decide which of the key jobs requires the greatest skill. Next, the evaluator tries to identify the one requiring the least skill. He then proceeds to examine each description in order to place it in proper order, so that when he is through the descriptions are arranged from high to low in accordance with the degree of skill required. He may, if he wishes, tie two jobs, indicating that he thinks they require about the same skill. Each evaluator submits the results of his judgment in writing to the chief analyst, who assembles these opinions in the manner shown in Exhibit III. This time, however, there are no standards for comparison, and the assumption is made that the average rank of the group is correct. There will be less agreement in ranking some jobs than others. The committee members will discuss their differences and finally agree on some rank order, which may differ from the result of the averaging of the first set of opinions. At any rate, they will finally agree on an acceptable rank order for the key jobs on each of the five factors. This operation, it will be noticed, does not indicate the size of the interval between jobs, and the next task is to determine these interval magnitudes. This may be accomplished, in factor comparison evaluation, by one of four methods, the description and use of which will be the subject of another article.

EVALUATING REMAINING JOBS WITH THE KEY SCALES

Having assigned point values to the key jobs, the evaluators will now have completed the creation of the five factor key scales. From this point on the process consists of comparing each new job with the jobs on the key scales. When a position is found on a key scale which requires about the same amount of a given factor as the job being evaluated, the latter is simply assigned the same number of points as is possessed by that key job for that factor. Adding up the resulting values for the five factors gives the total point value for the job being evaluated.*

It has already been mentioned that each evaluator is required to submit his opinions of the proper evaluations of the five factors to the chief job analyst. This is done on a form designed for the purpose, illustrated in Exhibit IV. The chief analyst then collates the opinions of the evaluators on a single summary sheet. Three of these sheets are shown in Exhibit V, each one employing a slightly different method. The first one lends itself most readily to evaluating all jobs one factor at a time, and this is believed to be the most satisfactory method. The second example is also used for reaching agreement one factor at a time. The third one, first employed at the Washington Gas Light Com-

* This process is described in detail in the *Manual of Job Evaluation* referred to.

JOB NOS.:	210	220	227	233	235	236	239	241	242	247	266	271	285	286	287	320	803	828	857	921
MENTAL																				
CWB	41	36	36	27	27	41	31	23	27	36	23	23	20	20	23	36	41	17	47	27
McD	41	36	31	27	31	31	36	31	31	27	31	27	17	23	27	41	41	20	41	23
Van	41	36	31	27	27	31	31	27	27	27	27	23	17	20	27	41	47	20	41	27
WHA	36	36	31	31	31	31	31	31	31	27	31	27	20	23	27	47	53	23	53	36
EHB	36	36	31	23	27	36	27	23	23	31	27	31	17	23	27	41	41	17	41	36
MEC	47	31	31	31	31	41	36	31	31	36	36	27	23	27	31	41	41	20	47	27
FAH	36	31	31	27	27	36	31	27	27	27	27	23	20	23	23	36	41	20	47	31
JWH	41	36	31	27	27	31	31	27	27	27	27	27	20	23	27	41	41	20	41	27
MM	36	31	27	23	27	36	27	23	23	27	23	23	15	17	20	53	41	15	41	27
JWS																				
RS	36	36	27	23	27	31	31	31	27	27	31	27	20	23	27	47	47	17	47	36
CNV	36	23	27	20	27	36	36	27	23	27	23	23	17	23	23	41	53	15	47	27
SKILL																				
CWB	41	36	36	31	31	47	36	27	31	36	27	27	23	27	27	36	47	23	53	31
McD	41	36	31	36	36	41	36	31	31	36	31	27	23	31	31	41	47	23	47	31
Van	41	36	31	31	31	36	36	27	27	31	31	27	23	27	31	47	47	23	47	31
WHA	36	36	31	31	31	36	36	31	31	31	31	31	23	27	31	53	53	27	53	36
EHB	41	36	31	27	31	41	31	27	27	36	31	31	23	27	31	47	47	23	47	41
MEC	53	36	31	36	36	41	36	31	31	36	31	27	23	27	31	41	47	20	47	31
FAH	41	36	31	31	31	47	36	27	27	41	27	27	23	27	31	41	53	23	47	36
JWH	41	36	36	36	31	41	36	31	31	36	31	27	23	27	31	47	47	27	47	31
MM	41	36	31	27	31	41	31	27	31	31	27	23	20	23	27	61	47	20	47	31
JWS																				
RS	36	36	31	27	31	41	31	31	31	36	31	31	20	23	27	53	47	23	47	36
CNV	41	23	27	23	31	36	36	27	31	31	31	23	20	23	27	47	53	23	47	31
RESPONS.																				
CWB	48	38	38	31	34	54	34	28	31	43	28	28	22	25	28	61	61	22	76	31
McD	48	38	34	31	38	54	38	31	34	48	34	28	25	28	31	61	68	28	68	34
Van	48	38	34	31	34	48	34	31	34	43	34	28	22	25	28	61	61	28	61	38
WHA	48	43	34	31	34	54	34	34	34	48	34	34	22	28	31	61	61	28	85	54
EHB	43	43	38	31	34	48	34	31	31	43	34	38	22	25	31	61	61	22	76	54
MEC	48	43	34	34	38	54	38	34	34	48	34	31	22	25	28	61	54	28	68	34
FAH	43	38	34	34	38	54	43	31	34	48	34	25	22	28	31	54	61	22	68	43
JWH	48	43	38	31	34	48	38	34	34	43	34	28	22	25	28	61	68	28	68	34
MM	48	38	31	28	31	48	31	28	31	43	28	28	20	25	28	76	54	22	61	34
JWS																				
RS	48	48	31	31	34	54	34	34	34	43	38	31	22	25	28	68	61	25	68	43
CNV	41	31	38	25	28	54	41	38	34	48	31	28	25	25	31	68	85	25	68	31
PHYSICAL																				
CWB	12	14	12	14	14	21	14	14	14	21	14	12	14	14	17	14	12	14	12	14
McD	14	14	14	12	12	21	14	14	14	21	12	12	14	17	17	17	12	17	12	14
Van	14	14	14	14	14	21	17	17	14	21	14	14	17	17	17	17	12	17	12	14
WHA	14	14	14	14	14	21	14	14	12	21	14	12	14	14	14	17	12	14	12	12
EHB	14	14	14	14	14	21	14	14	14	21	14	12	14	17	17	17	12	17	12	12
MEC	14	14	14	14	14	21	14	14	14	21	12	14	17	17	17	17	12	17	12	14
FAH	12	14	14	17	17	21	14	14	14	21	14	12	14	17	17	14	12	17	12	12
JWH	14	14	14	14	14	21	14	14	14	21	14	14	14	17	17	17	12	17	12	14
MM	14	12	12	14	14	21	14	14	14	21	14	14	14	17	17	17	12	17	12	14
JWS																				
RS	12	14	14	17	14	21	14	14	14	21	12	12	14	17	17	17	12	17	12	12
CNV	14	14	14	14	17	25	14	14	14	25	14	14	14	17	17	17	14	17	14	14
WORK COND.																				
CWB	6	5	5	6	6	19	5	6	6	19	6	6	6	6	6	8	6	6	6	6
McD	6	5	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
Van	6	5	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
WHA	6	5	6	6	6	23	6	6	6	23	6	6	6	6	6	8	6	6	6	6
EHB	6	6	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
MEC	6	5	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
FAH	6	4	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
JWH	6	6	6	6	6	19	6	6	6	19	6	6	6	6	6	8	6	6	6	6
MM	6	5	6	6	6	23	6	6	6	23	6	6	6	6	6	8	6	6	6	6
JWS																				
RS	6	5	6	6	6	23	6	6	6	23	6	6	6	6	6	8	6	6	6	6
CNV	6	6	6	6	6	23	6	6	6	23	6	6	6	6	6	8	6	6	6	6
TOTAL:	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SALARY GRADE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PREV. GRADE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: The original of this summary sheet is a two-page form, ruled horizontally and vertically to provide boxes for each figure.

EXHIBIT V-B

PRELIMINARY RECAPITULATION SHEET — JOB EVALUATION — GROUP — FACTOR — PAGE

Job 212		Job 415		Job 427		Job 428		Job 429	
249		249		249		249		249	
216		216		216		216		216	
188		188		188		188		188	
163		163		163		163		163	
142		142		142		142		142	
123		123		123		123		123	
107		107		107		107		107	
93		93		93		93		93	
81		81		81		81		81	
70		70		70		70		70	
61		61		61		61		61	
53		53		53		53		53	
47		47		47		47		47	
41	C-M-V-J	41		41		41		41	
36	W-E-F	36		36		36		36	
31		31	M-W-J	31	E	31		31	
27		27	C-V-E-F	27	W	27		27	
23		23		23	C-V-F-J	23		23	
20		20		20	M	20	All	20	W-F-J
17		17		17		17		17	M-V
15		15		15		15		15	C-E
13		13		13		13		13	
11		11		11		11		11	
10		10		10		10		10	
9		9		9		9		9	
8		8		8		8		8	
7		7		7		7		7	
6		6		6		6		6	
5		5		5		5		5	
4		4		4		4		4	
3		3		3		3		3	

EXHIBIT V-C

Date **May 17, 1945**

Job No. **320**							*Job No.*						
EVALUATOR	M	S	R	P	WC	*Total*	M	S	R	P	WC	*Total*
A.W.J.	36	47	41	12	6	142						
D.S.B.	41	47	41	12	6	147						
J.M.I.	41	47	41	12	6	147						
W.H.G.	47	53	41	12	6	159						
D.R.M.	41	47	41	12	6	147						
A.W.F.	41	47	41	12	6	147						
E.M.Y.	36	53	36	12	6	143						
J.F.K.	41	47	41	12	6	147						
FINAL	41	47	41	12	6	147						

Job No.							*Job No.*						
EVALUATOR	M	S	R	P	WC	*Total*	M	S	R	P	WC	*Total*
A.W.J.												
D.S.B..												
J.M.I.												
W.H.G.												
D.R.M.												
A.W.F.												
E.M.Y.												
J.F.K.												

NOTE: The original of this form, which is 8½" by 11", is ruled both horizontally and vertically, providing a box for each figure.

pany, is designed to permit reaching agreement among evaluators for all five factors of one position at a time. It works quite satisfactorily, but the writer's preference is for reaching agreement on all jobs one factor at a time.

Under the direction of a committee chairman, differences in opinion are discussed and resolved. It should be noted that a copy of the collated opinions is furnished each evaluator when using the first style of form shown. This is not done in the case of the other two, but sometimes another form is employed for giving every evaluator the assembled opinions of all evaluators.

ACCURACY OF EVALUATORS

Relative accuracy of evaluators is constantly scrutinized and is an important factor in good training. This process has already been described,* and it is followed after each meeting of the committee. The calculations are made so as to count the number of deviations by each evaluator, a deviation being defined as any difference from the finally-agreed-upon evaluation. These differences are calculated in "steps." Two figures are calculated; one shows the number of cases where there is perfect agreement, and the second shows differences of one step. As has already been reported in another article, we find that the average accuracy attained by evaluators in many different kinds of situations is always about the same. When these differences are expressed as the percentage of *agreement,* we find that evaluators are in perfect agreement

* "Characteristics of Factor Comparison Job Evaluation," by Edward N. Hay, PERSONNEL, May, 1946, pages 370-375.

approximately 65 per cent of the time. Another approximately 30 per cent of the judgments of all evaluators show differences of only one step. Thus, only the balance of 5 per cent of the judgments are more than one step away from the figures finally agreed upon. Another way of indicating the size of these figures is to point out that the steps on the scales we are using are progressively 15 per cent greater. Deviations of two steps or more are therefore the compounding of 15 per cent or approximately 32 per cent apart. Exhibit III shows how these deviations have been calculated for each rater.

One other interesting phenomenon of the method of pooled judgment employed in factor comparison should be mentioned. The phenomenon referred to is the tendency of all evaluators to work toward a common viewpoint and toward the attainment of a skill which will yield minimum variations from the opinions of their colleagues. This is a natural result of good training. It might be thought that an obstinate fellow or one who willfully seeks to nullify the work of the committee would be able to bring about disagreement at will. The effect of the grouping and publishing of these judgments is to restrain such tendencies. Mention has been made of the manner in which we calculate the differences shown by each evaluator as compared with the consensus of the group. This has the effect of putting the evaluators under pressure either to conform within reasonable limits or to "turn tail" and run—that is, to resign from the committee. The latter action is nearly inconceivable for the kind of persons who are selected for evaluating committees. The result is that they feel, and gradually accept, the pressures compelling them to agree reasonably with their fellows. It is more than the majority of us can take to be "out of step" most of the time. Each evaluator consequently bends his best efforts to getting "on the beam." Sometimes a "maverick" attempts to defend his differences, and occasionally someone tries to confuse the work of the group. These efforts generally are soon abandoned under the necessity of being at least as accurate as one's associates.

One more thing may be said about job evaluators, which is related to the training program. This is an answer to the question, "What are the requirements for good evaluation?" There seem to be two primary requirements: first, good judgment; and second, knowledge of as many jobs being rated as possible. The ideal person to select for evaluation is one who has executive or supervisory duties not lower than those of any position to be evaluated. This level of selection assures maximum job knowledge and likewise tends to narrow the choice to persons of well-seasoned judgment. It is, however, feasible to use persons of lower rank; but, if this is done, the resulting evaluation should be submitted to a higher level for scrutiny and approval. Both methods are being employed successfully.

UNION ACTIVITY ON THE EMPLOYER'S PROPERTY

By DAVID H. WERTHER
Member of New Jersey Bar*

The vexatious problem of solicitation and other union activities on company property and time is discussed here in its legal aspects by a former attorney for the National Labor Relations Board. The Board's general policy on the matter is indicated by numerous case citations. Mr. Werther emphasizes that plant rules banning union activity on company property must be formulated in the light of these NLRB decisions and must be impartially administered.

HOW far may an employer legally go in making and enforcing rules covering the conduct of employees on company property? May the employer, in the interests of maintaining discipline and unimpeded production, curtail union activity on company property? May employees recruit members for unions, collect dues, disseminate union propaganda, engage in union discussion and other union activity on the employer's premises?

Despite the clear interdiction of the Wagner Act guarantee to employees of the right to self-organization and union activity, the National Labor Relations Board has recognized that this right is by no means paramount, in all cases, to the employer's right to regulate the use of his property and time in order to maintain discipline and prevent interference with production. The employer may, according to Board decisions, curtail and delimit the extent to which his property and tangibles may be used for union activity.

REPRESENTATIVE NLRB DECISIONS

The Board's policy in this regard was stated in *Peyton Packing Company, 49 NLRB 828,* as follows:

> The Act, of course, does not prevent an employer from making and enforcing reasonable rules covering the conduct of employees on company time. *Working time is for work* [italics the author's]. It is therefore within the province of an employer to promulgate and enforce a rule prohibiting union solicitation during working hours. . . . It is no less true that time outside working hours whether before or after work, or during luncheon or rest periods, is an employee's time to use as he wishes without unreasonable restraint, although the employee is on company property. It is therewith not within the province of an employer to promulgate and enforce a rule prohibiting union solicitation by an employee outside of working hours, although on company property.

Since this decision, the Board has, in general, followed the rule that an employer may properly prohibit union activity during working time, but not during the employees' own time—even though they are on company property.

Let us see how these rules have been interpreted on a case-by-case basis. In *Goodyear Aircraft Corporation, 57 NLRB 502,* the Board held it lawful for an employer, acting in the interests of plant cleanliness, to prohibit the distribution of union literature at *any* time within his plant, where production is being carried on. In this situation, the Board concluded that an employer's

* Now practicing as a labor relations consultant in New York City.

legitimate interest in maintaining plant cleanliness outweighed the employees' interest in engaging in the prohibited activity. This case is to be distinguished, however, from *Le Tourneau Company of Georgia, 54 NLRB 1253* (sustained by the U. S. Supreme Court), where a rule prohibiting distribution of union literature at any time was cited as improper insofar as it was applied to prevent distribution on the company's parking lot. It should be noted that special circumstances existed in this case. The employees entered and left the grounds by bus and automobile, none of them setting foot upon the highway. Communication with employees outside the company's premises was thus impossible.

In *Johnson-Stephens Shinkle Shoe Co., 54 NLRB 189,* the Board approved plant rules imposing restrictions upon employees' movements between departments, and union employees' congregating and speech-making, where the evidence showed—among other things—substantial increase in visiting and congregating among the employees during the organizational drive, a background of labor disputes, and a discipline breakdown.

Collection of dues on the premises may be barred if carried on during working hours. In *D-N-X Engine Corp., 57 NLRB 740,* it was held that the discharge of a union member for soliciting dues during working hours was not discriminatory even though the employer had no rules against such solicitation. Similarly, it was held lawful to discharge a union organizer who solicited members for a union during working hours—*Dallas Tank and Welding Co., 51 NLRB 209.*

LEGALITY OF PLANT REGULATIONS

Although plant rules banning union activity on company time are lawful, they may become unlawful if improperly administered. For example, where two opposing unions are organizing in the plant, the rules should be applied with equal effectiveness to the activities of the adherents of both. Restraining activities in behalf of one union while permitting unhampered operations in behalf of the other may be construed as unlawful interference with the rights of the former and unlawful assistance and support to the latter. Also, equal penalties should be applied to all offenders. Where the customary penalty is layoff for a period of time, imposition of a greater penalty—such as discharge—may be stamped as discriminatory by the Board. Where it is the practice to warn offenders before imposing punishment for rules infraction, each offender becomes entitled to warning preliminary to punishment. Omission of the warning, under the circumstances, may incur charges of discrimination.

Admonitions and reprimands against soliciting on company time must be given in an atmosphere of neutrality. See *Ecusta Paper Corp., 66 NLRB 147* (March 27, 1946), where it was held that "while warnings and reprimands for soliciting on company time, properly given, are an appropriate part of management's functions in administering its affairs, such warnings and reprimands, improperly given, can readily go beyond the purely administrative functions of management and translate themselves into acts of interference, restraint, and coercion." The Board found fault with the *manner* and *methods* employed by the supervisors in warning the workers, holding that they showed hostility toward the union.

It is recommended that full publicity of the rule against soliciting on company time be made to the employees; also, that management be entirely neutral in administering the regulation.

On the other side of the ledger, it is to be observed that, generally, employees have the right to engage in legitimate union activities on the employer's property during non-working hours. This includes the right to discuss union affairs, solicit membership, collect dues and assessments, and distribute union literature. These activities may be pursued during leisure or non-working periods such as before or after work, lunchtime, and rest periods. It is to be noted, however, that a comprehensive no-solicitation rule applicable to employees on company property even on their own time is not wholly invalid. It is lawful insofar as it pertains to union activity on company time. Thus, a discharge for engaging in union activity on company time was held proper despite the fact that the rule was invalid in part.

THE PERSONNEL BOOKSHELF

PERSONNEL MANAGEMENT: *Its Scope and Practice.* By C. H. Northcott. Sir Isaac Pitman & Sons, Ltd., London, England, 1945. 329 pages. 18*s.*

*Reviewed by Mrs. Matthew Roberts**

Mr. Northcott presents his book as the first general text on the principles and practices of personnel management to appear in Great Britain. His data is drawn largely from his own experience in industrial relations during the past 25 years in Rowntree & Co., Ltd., York, England—frequently referred to as the Cocoa Works—and also from his study of practices in other representative firms in England and in the United States which he has visited. The author states that his aim is to prove the vital contribution personnel management can make to the efficient conduct of a business. He acknowledges that many British employers are not yet convinced of its value. His book is notable for its underlying philosophy of the social aspects of business. It is evident throughout that Mr. Northcott's own firm has been outstanding in recognizing the importance of cooperation between management and workers. Numerous illustrations show that this cooperation has resulted in increased efficiency because of the sense of participation which the workers have felt in matters that concern them directly.

The organization of the personnel function in the Rowntree firm is clearly described. Personnel policy is approved by the Board of Directors—one of whom is designated the Labor Director—but is frequently originated by the personnel manager, after consultation with the line organization and the workers. Thereafter, apparently, the personnel manager takes active responsibility for the over-all application of personnel policy in the firm. Mr. Northcott gives a detailed description of personnel functions which are in the main similar to the activities of personnel departments in American business firms.

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Some of the most valuable chapters relate to incentives in industry, work and psychology, and the psychology of working groups. The material is based on careful studies—carried on by such firms as Rowntree in England and the Western Electric Company in the United States—which emphasize the complex motivation in the working situation and the importance of an increased knowledge and understanding of the social and economic needs of workers. Here the author reveals his own inquiring mind and is more convincing than in other parts of the book where he rather arbitrarily lists principles for the guidance of personnel managers.

The actual administration of the personnel function, as described by this author, appears to concentrate authority in the personnel department to a greater extent than is typical in this country or, according to other accounts, in England. The recent tendency has been to make the role of the personnel manager mainly advisory; on this understanding, he would not usurp the functions of the line executives, but provide expert knowledge, guidance, services, and the tools which enable them to increase their effectiveness in handling the human problems that arise in the daily life of the business. It would seem that through this method there is a greater opportunity to build a socially responsible management. Mr. Northcott is genuinely anxious to promote socially responsible management, but in his insistence on the authority of the personnel manager, he seems to be putting back the clock.

With the growth of complexity in business, there has been the same unfortunate tendency in England as here to undermine the position of the foreman through the introduction of specialists. According to Northcott, the foreman is often bypassed in English firms in the dealings of employers with the works councils.

A chapter is devoted to joint consultation through the Whitley Councils. Joint consultation between employers and workers is in a more mature stage of development in England than here. For the most part, England's unions have passed through the period of organization when their leadership was militant. More of them realize that the well-being of their membership depends on an efficient and successful industrial system. With the fuller recognition of the obligations and responsibilities of the trade unions, the leaders chosen are frequently men of calmer temperament and more administrative experience. The American student of labor problems might find it helpful to study the experience of the works councils in England for perspective on the current labor situation in this country.

In the concluding chapter, the author makes a plea for professional training for management, including personnel management, at the university level. He recognizes that most of such training should be common to all types of management and that there need be only a relatively small part devoted to the particular needs of the personnel manager. It is interesting to learn that there has been organized instruction for women to prepare for personnel work for the past 20 years, but that no similar program for men exists in England. Professional groups like the Institute of Labour Management are now formulating standards for and contents of such training, but education for management still waits upon additional facilities in the English universities.

The book is valuable as a case history of personnel management and employer-employee relations in an English firm noted for its efforts in these directions. In some respects, the volume would have been more persuasive had Mr. Northcott confined himself to this history of his own firm. He is not so fortunate in his attempt to write a general text for personnel managers. His generalizations are based on too narrow and too special an experience, and he does not always discriminate between a rule of conduct and a living process of adjustment to complex and changing situations.

In spite of this, Mr. Northcott's book has real value for the student of personnel management and deserves to be read by personnel managers and others interested in the problem of human relations in industry.

JOB EVALUATION METHODS. By Charles W. Lytle. The Ronald Press Company, New York, 1946. 329 pages. $6.00.

*Reviewed by C. C. Balderston**

A book on which so much effort has obviously been expended adds to the reference material in the field of wage and salary administration. Mr. Lytle's new volume is a useful compilation of information.

In attempting to appraise this work, which is the product of much labor even if disappointing in its treatment of many fundamentals, one must start with the author's objective: "to separate the whole of job analysis and evaluation into functional steps, as indicated by the chapter headings. This

* Dean, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia.

makes it possible to compare and select methods, techniques, characteristics, measuring scales, etc., to fit any set of conditions." Curiously enough, he states that this is a "totally new analytic method of approaching job evaluation."

The chapter headings referred to in the foregoing statement of objectives are as follows:

1. A minor function becomes a major one.
2. Determining policies and organizing.
3. Methods and techniques.
4. Choosing job characteristics.
5. Selling the plan.
6. Setting up measuring scales.
7. Job analysis—describing and specifying.
8. Job analysis—classifying.
9. Locality surveys—setting the general wage level.
10. Building the rate structure.
11. Operating and adjusting.
12. Merit rating.
13. Applying evaluation to office and supervisory positions.

APPENDIX:

A. Equal pay for equal work.
B. Government regulations on wages and salaries.

One doubts that the book fulfills the author's promise to his readers that through it "anyone may obtain a full grasp of the subject and know how to apply this knowledge to get results." Wage administration is not so easy to comprehend, nor does this book insure full understanding. For instance, one would not gain the correct impression of the plan developed by the Army Service Forces and now used by the War Department for its civilian employees from the references to it. The author fails to distinguish between the descriptions of 44 key jobs used in the surveys of locality rates, and the thousands of descriptions employed in determining the internal alignment of civilian rates in the several hundred Army installations. Nor is mention made of the factor comparison technique used at Headquarters for assigning grades to the jobs placed in the manuals that were issued to guide the posts, camps, and stations in evaluating their jobs. Moreover, the author seems to have misunderstood completely the Army's technique for making locality surveys, for he devotes page 170 to a criticism of a few illustrative figures inserted in a directive to the field to illustrate how the reporting forms were to be filled out. But enough of such details!

While the inclusion of a chapter on merit rating broadens the scope of the book beyond that suggested by its title, it is well that in Chapters 11 and 12 the author has introduced his readers to the application of wage schedules after they are developed. In fact, one wishes that he had made even more complete his treatment of the practical operating problems of wage and salary administration. Chapter 11 is devoted to out-of-line rates, readjustment of the structure, hiring rates, production rates for incentive-paid jobs, how to set a correct piece rate, periodic checks, processing of rate changes, new jobs, policy regarding classification of employees, grievance machinery and procedure; Chapter 12, to the *why* and *how* of merit rating.

The practical problems involved in applying a wage schedule, which arise continuously in an organization of size and which so significantly affect the success of a wage program, merit more consideration than they are given in the current literature. There is copious illustrative material on the preparation of job descriptions, the evaluation of the relative importance of jobs, and the collection of prevailing wage rates. The problems of application are understandably elusive to writers, but very real to company executives. How, for instance, is the responsibility of "line" operating executives for deciding upon the content and staffing of jobs to be kept from becoming confused with the responsibility of the wage analysts for accurate descriptions of the jobs once they are set up? Failure to recognize the proper relation of operating executives and wage analysts leads to the cart's being placed before the horse, with the result that jobs (or at least their descriptions) are created with an eye not to what is most efficient, but rather to the pay rate obtainable under the authorized schedule. Or consider the host of problems arising daily from initial hirings, changes from lower- to higher-rated jobs and vice versa, the action to be taken when an employee is discovered to be misassigned, or when an employee is transferred to another plant or department of the company at the initiation of the management and not at his own request. The difficulty of making continuous audits to keep wage schedules up-to-date and in tune with alterations in job content and locality rates, and the fact that the appraisal of the quality of human performance is more intangible than the evaluation of jobs *per se*, both contribute to the difficulties of application.

COUNSELING WITH RETURNED SERVICEMEN. By Carl R. Rogers and John L. Wallen. McGraw-Hill Book Co., Inc., New York, 1946. 159 pages. $1.60.

*Reviewed by Schuyler Dean Hoslett**

This is an important volume on several counts. It presents in concise, clear, and simple form a kind of instructional handbook to introduce would-be counselors to the non-directive method. The ordinary person can understand and enjoy it; he will not bog down under a plethora of de-

* Harvard University and Wellesley College; Director, Park College Press.

tail and jargon. And when he has digested the material, he can at least do more good than harm when he attempts to counsel.

The book contains also an important refinement of technique: It introduces "information-giving" as a legitimate function of the counselor. Earlier statement of the Rogerian technique made no provision for information-giving; individual progress came about through the client's insight and decision developed in a permissive atmosphere. Yet in many industrial situations, counselors found that intelligent decision-making was impossible without more factual knowledge being made available to the counselee. In some plants this deficiency was recognized, and the giving of information—so long as it was not done in such a way as to influence the decision of the counselee—became an established part of non-directive counseling.* In this new statement, Rogers and Wallen suggest three uses of information: information to help clarify a choice to be made; information to implement a decision made by the counselee; and information to help the client discover the real problem.

The short or casual counseling contact is another phase of the industrial counselor's work well-treated in this manual. Counselors meet people informally in cafeterias, corridors, rest rooms, etc.—in many cases talking with them on just one or a few occasions. How these brief contacts may be made more useful, and just what results should be expected from them are intelligently discussed in a brief chapter.

While the scope of this book is rather broad—it has chapters on educational and vocational counseling and marital and family counseling—all of the material is useful to the industrial counselor as content or background. The fact that the book concerns returned servicemen does not limit its application to the non-veteran as well. Several distinct advantages in using the book for training are to be found in the excellent excerpts from actual interviews, a chapter on practice in counseling which forces the trainee to formulate responses to clients' statements, and an appendix of further reading.

* See the author's discussion in "Listening to the Troubled or Dissatisfied Employee," PERSONNEL, July, 1945.

52 Paychecks a Year

A GUARANTEED wage plan that has developed harmony between workers and management, and prompted employees to stick to their jobs when labor was shifting to high-paid war work, has been in effect at the Western States Envelope Co., Milwaukee, for the past 11 years.

The workers themselves requested that some plan be established whereby their views on wages and incentives might be presented to management. The outcome was the creation of an "Employees' Representative Committee," which had the power to negotiate with the management. At meetings of the workers and company officials, a guaranteed wage plan was devised which provides that 22.8 per cent of every sales dollar be set aside as a manufacturing cost fund. Under the plan, workers who have been with the company five years or more are guaranteed 1,820 hours of work a year—an average of 35 hours for 52 weeks. While this is the aim of the plan, employees have been averaging 40 to 42 hours a week. By holding down the production cost of the product, the employees' weekly pay goes up. There are also bonus plans and other incentives that have brought the workers' earnings to 24 per cent above the base pay.

An employee working less than 35 hours a week is paid for 35 hours, but goes in debt on the books for the deficiency until he has made it up. On the other hand, the company does not borrow time from the workers. When more than 40 hours must be put in during one week, time and a half is paid for the overtime.

At war's end the Western States Envelope Co. had 95 employees on its payroll. Since no reconversion is necessary in this line of manufacturing, no drop in employment is anticipated. About 75 per cent of the men and women in this plant have been with the company for five years or more, and turnover is practically nil. The machines are set for fair speeds, and the emphasis is as much on quality as on quantity of production.

—*Mill & Factory* 4/46